A SIMULATION STUDY OF THE EFFECTS OF REWARDS, TASK STRUCTURE AND INDIVIDUAL DIFFERENCES ON TASK PERFORMANCE, SATISFACTION AND INTRINSIC MOTIVATION

A thesis

submitted in partial fulfilment

of the requirements for the Degree

of

Master of Arts in Psychology

in the

University of Canterbury

by

R. Fikree

University of Canterbury

1984

TO MY PARENTS

WITH AFFECTION

AND APPRECIATION

ABSTRACT

The effects of task structure, reward contingency and individual difference variables upon, firstly, task performance and satisfaction and, secondly, behavioural and attributional measures of intrinsic motivation were studied in a job simulation setting. Two levels of task structure, enriched and unenriched tasks, were varied along the five core dimensions suggested by Hackman and Oldham (1975). Four levels of reward contingency were used: no pay, noncontingent pay, contingent pay and variable amount-variable ratio (VA-VR) pay. Task involvement, higher order need strength, sex and age were considered as moderator variables. Intrinsic and extrinsic motivation were defined by the task content-task consequence distinction. It was hypothesised, following the Cognitive Evaluation Theory (Deci, 1975), that contingent pay would lead to decreased intrinsic motivation due to a change in individuals' attributions of the causes of task motivation. Neither the attributional process nor the behavioural prediction was supported. However, contingent pay did result in higher levels of performance. It was also hypothesised that the enriched task would lead to higher levels of intrinsic motivation than the unenriched task. This hypothesis received partial support. In addition, both task structure and reward contingency factors were found to have significant main effects, but their interaction was not significant.

Further analysis of the results indicated that participants in the VA-VR pay condition had higher levels of performance quality and quantity than those in the contingent pay condition. Also, there were no significant differences between levels of performance quality and quantity for the no pay and the noncontingent pay conditions. Participants in the enriched task condition produced better quality and higher quantity of responses to the task than those in the unenriched condition. In addition,both reward contingency and enrichment of the task structure resulted in higher task satisfaction and an increase in attributions of performance to intrinsic factors. While none of the individual difference variables significantly moderated the dependent measures, a *post hoc* analysis of these results indicated that perceptions of task content was significantly related to age and sex. In all, the results did not support the Cognitive Evaluation Theory. Because of this, the distinctions between intrinsic and extrinsic motivation are considered in terms of the reinforcement theory. It is concluded that contingent reward systems have a facilitative rather than a detrimental effect upon intrinsic motivation and, when combined with tasks designed to be high on the core dimensions, they appear to be both intrinsically and extrinsically motivating.

ACKNOWLEDGEMENTS

I would like to express my appreciation and indebtedness here for the contributions many people have made in the preparation of this thesis.

My chief and special acknowledgement is due particularly to Mr. B.D. Jamieson for his time and careful supervision of this thesis. He made valuable suggestions throughout the period of this research, for which I would like to express deeply felt thanks. He was also gracious enough to provide many positive criticisms on the manuscript, although I claim full responsibility for any remaining errors.

The format of this thesis, would not have been possible without the efforts of the authors from whose works I have selected. Their contributions are gratefully acknowledged.

It is my privilege to have spent time and to have received support over the last two years from my best friend, Mahanoon Yusoff. I am deeply indebted to her for her ready help in the preparations of the graphs and her assistance in compiling the in-basket exercises. Her unfailing understanding and active interest in my work deserves special thanks.

I am also indebted to my friend, Raziah Fakir, who devoted considerable time and effort to the seemingly endless task of proofing various versions of the manuscript.

I also wish to sincerely thank Mr. Kevin Moesbergen for reading the final draft and helping improve its flow, logic, and readability. He has read all the chapters with care and his comments have helped improve the final product.

Carol Anderson, Deirdre Bakker, Georgie Hall and Judy McLellan provided helpful assistance in rating the in-basket protocols, for which I am grateful. The Department of Psychology of the University of Canterbury provided a large part of the finance and facilities that made the writing of the thesis possible. Also, to staff members and fellow-students of the Department, the author extends his appreciation of their help.

Most of all, I wish to thank the undergraduate students who participated in this research for their forbearance in their roles as "guinea pigs" and for their many useful suggestions during the research.

Thanks must also be extended to Merilyn Hooper and Barbara Cottrell for their excellent photographic reproduction of the graphs. My meagre secretarial talents have been greatly supplemented by Mrs. G. Lamb, who devoted considerable effort to the laborious task of typing this thesis.

Lastly, I would like to thank my family members and friends who remained my friends in spite of myself during the writing of this thesis, and who have made life much more livable as a result.

My overriding debt is to my parents, whom without their love, support and constant encouragement, this thesis would have not been possible. I dedicate this thesis to them.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

In recent years, the most prevalent approach to the study of rewards and incentive processes has been an empirical, functional analysis. In this tradition, rewards are defined by their positive effects on task performance and the subsequent frequency of the responses on which they are contingent. The scientific and practical benefits of this approach have been numerous and highly publicised, particularly in work organisations in relation to pay rates and awards.

By contrast to this tradition, numerous studies have shown that there are potential costs involved in the indiscriminate use of explicit reward and that these costs have received little scrutiny. In support of this contention, the contributors provide considerable evidence that tangible rewards may have negative as well as positive effects on both task performance and subsequent choice of behaviour. In the present research, the fundamental aim is to expand the scope of inquiry relevant to the study of human motivation in work organisations. Most generally, this thesis constitutes an attempt to closely examine two factors of work motivation that have received proportionately much attention within the organisational *Zeitgeist* in recent years. These two factors are the *extrinsic* and *intrinsic* determinants of work behaviour.

There is no denying that there are questions concerning the consequences of the use of rewards that are not addressed in this study. Also, this study does not attempt to imply that systematic incentive programmes cannot be used to produce significant benefits. The question here is, not whether rewards are good or bad, but how they can be used most effectively and how their effectiveness should be evaluated.

In this introductory chapter an attempt will be made to place the research topic in perspective and to provide an outline of the approach to the topic.

1.1 EXTRINSIC REWARDS AND EXTRINSIC MOTIVATION

Reward, incentive, bonus, these terms carry positive connotations to psychologists and to members of many cultures of the Western world. This feeling is generally supported by experience, and it has the apparent directness that makes much sense in a culture based on pragmatic assumptions. Most people would agree that the long and the short of the matter is that men and women will or won't do things depending on the financial or other extrinsic rewards (or punishments), they get. Our social institutions, from kindergartens to jobs, are built on this belief. It is this assumption that underlies the main motivational theories currently in use. Both, those theories based on the concept of biological drive, like the ones of Hull and Freud, and the more cognitive perspectives of Toiman, Murray, Lewin, or McClelland, specify that an individual will probably consider to be performing an act for some goal independent of the activity itself (e.g., higher pay, promotion to a better job). Unfortunately,

these formulations do not easily allow for the fact that a worker may be highly productive simply because he or she enjoys working hard or is satisfied by good work.

Viewed as a whole, these motivational theories can be classified as theories of extrinsic motivation, since each assumes a specific goal that provides satisfaction independent of the activity itself.[1] There is no doubt that this assumption corresponds to reality. Extrinsic rewards (and punishments) do motivate people to act. Yet the fact that extrinsic rewards are motivating is not in itself enough to satisfy one's curiosity, which raises a few questions about what their apparently so obvious relationship is. The first question is: Do extrinsic rewards always increase performance, or do they sometimes serve to inhibit certain work behaviours? This question has been the topic of many studies in the past decade and one that has had a strong impact on contemporary industrial psychology. In this content, however, I wish to raise some other issues, which although related to the central thesis of this research, may open some new problems and new implications. These questions are: Do people really have to maximise rewards in order to motivate people at work? Should extrinsic reward be our only motivational constructs?

1.2 INTRINSIC REWARDS AND INTRINSIC MOTIVATION

Research on intrinsic motivation suggests a somewhat different perspective. It reveals that a considerable

---

[1] Although Lewin's construct of "resultant force" emphasised the goal-directed nature of motivation, its formulation did actually include the intrinsic valence associated with a behavioural path as well as the extrinsic ends of an action.

proportion of behaviour cannot be explained in terms of extrinsic goals and rewards but rather in terms of goals and rewards that arise out of direct involvement with an ongoing activity. The argument here is that of the "hidden costs of rewards" (Deci, 1975), a cost at the metatheoretical level. The obviousness of extrinsic rewards has made people assume that they are more prevalent and powerful than they really are, thereby blinding them to the existence of less visible causal factors in behaviour. In the long run, however, these may be more important than extrinsic rewards for understanding what man does now and what he could be doing in future.

Research on intrinsic motivation has alerted researchers to the fact that people will work at tasks that appear to offer nothing beyond the completion of the task itself. Even rats (Montogomery, 1954) and monkeys (Harlow, 1953) can sustain behaviour motivated only by the solution of puzzles. There are many studies done on the intrinsic motivation of children and adults which will be discussed in greater detail in the next chapter.

It is possible, of course, to say that all these behaviours fit the traditional models of motivation, because there must be rewards hidden in the activity itself. The only difference is that instead of coming after the completion of the activity, the rewards are much closer to the behaviour itself; the feedback loops might be shorter, but there is no qualitative distinction between intrinsic and extrinsic rewards.

Yet it is also possible that "explaining away" intrinsic rewards in this fashion distorts their real nature.

The assertion of a distinction between the two kinds of motivation leads directly to three questions. First, what relationship exists between the two sets of motivational factors? Is it possible to be motivated by, or to attribute one's behaviour to, both intrinsic and extrinsic factors at the same time or are they exclusive processes? Second, are there differences between intrinsic and extrinsic motivation in terms of their effects upon task performance and satisfaction? Third, are there differences between intrinsic and extrinsic motivation in terms of their effects upon task involvement and higher order need strength?

1.3 APPROACH TO THE PROBLEM

In the attempts to explore the determinants of intrinsic motivation, a series of fourteen possible factors were identified in the voluminous literature available. These factors were:

1. Contingent extrinsic rewards.
2. Degree of variety in the skills required to do the task.
3. Degree to which the person identifies with the task.
4. Degree to which the person does a complete unit of the task.
5. Perceived significance of the task.
6. Degree of autonomy on the task.
7. Adequacy of performance feedback.
8. Feelings of personal control over the task.
9. Feelings of competence at doing the task.
10. Degree to which the task requires the use of valued abilities.

11. Higher order need strength.

12. Work values.

13. Cultural influences.

14. Optimal arousal level.

The major purpose of the research is to systematically examine some of these possible determinants in an experimental setting and to explore their effects on motivation, performance, satisfaction, involvement and higher order need strength. The research strategy adopted in this study explores these potentially powerful variables in a relatively inexpensive setting, such as in job simulation, and from these studies isolate the best procedures for testing in field settings. Thus, the ultimate goal is to take a subset of these variables and procedures into a field setting and to assess their effectiveness for enhancing motivation, satisfaction, performance, involvement and higher order need strength.

This particular research deals with seven of the variables listed: extrinsic rewards, degree of variety in the skills required to do the task, degree to which the person identifies with the task, perceived significance of the task, degree of autonomy on the task, the adequacy of performance feedback and higher order need strength, and investigates them within a simulation setting.

This chapter is intended to acquaint the reader with the topic of the research and briefly outline the conditions under which rewards may have detrimental, as well as beneficial effects. In Chapter 2 of this thesis, the theoretical roots of cognitive and reinforcement theorists are traced and the basis of intrinsic motivation is examined.

Also the various usages of the intrinsic-extrinsic distinction are reviewed, categorised and discussed. Finally, the cognitive evaluation theory proposed by Deci (1975) is briefly described in relation to the contingent-noncontingent compensation controversy and a resolution of the controversy is proposed in terms of work performance and satisfaction enhancement.

In Chapter 3, the rationale for this study and the hypotheses to be tested are presented. A detailed account of the experimental design and procedure is presented in Chapter 4. Chapter 5 presents the experimental results, which are discussed in the following chapter. A summary of the study constitutes the first section of the final chapter. Some of the implications and limitations of the data presented in the preceding chapters are discussed and conclusions and implications for future research are drawn in the remaining sections of Chapter 7. The thesis concludes with a bibliography, and appendices which contain samples of the in-basket exercises, the attitude questionnaires and the self-report measures employed in this investigation.

CHAPTER 2

REVIEW OF THE LITERATURE

A central thrust of managerial psychology has been to determine the motivating forces that energise, direct and sustain behaviour (Steers & Porter, 1975). Lewin's (1938) conceptualisation that behaviour is the result of interactions between individual and environmental factors is still widely accepted. However, this approach is too global to provide a basis for research, and there is disagreement on the dimensions of these factors. A major controversy historically surrounds the relative importance of each factor as a determinant of behaviour and the extent to which other concepts (such as needs and drives) are innate or learned. Cognitive theorists argue that the individual's cognitive processes play an important role in determining behaviour, while reinforcement theorists retort that it is unnecessary, if not impossible, to examine such thought processes, and therefore our central concern should be the behaviour itself. Each theoretical position specifies alternative mixes and categories of variables.

This chapter makes no attempt to resolve such debate but rather explicates the positions of reinforcement theorists (such as Scott, 1975) and cognitive theorists (like Deci, 1975), specifically as they relate to the current controversy regarding intrinsic motivation. This controversy centres on Deci's research, a departure from the central thrust of the cognitive

school and one which has provided a convenient target for reinforcement theorists and some cognitive theorists.

The review of literature is divided into three broad sections. In the first section, the theoretical roots of cognitive and reinforcement theorists are traced and the basis of intrinsic motivation is examined. The intrinsic-extrinsic distinction has been used in a variety of ways to describe employee motivation and to explain organisational behaviour. Various usages are reviewed, categorised and discussed in the second section. In the third section the cognitive evaluation theory proposed by Deci is briefly described in relation to the contingent-noncontingent compensation controversy and a resolution of the controversy is proposed in terms of work performance and satisfaction enhancement. The implications of moderating effects of task design and individual difference variables (higher order need strength) on the relationships of compensation contingency with performance and satisfaction indices is also described.

2.1 COGNITIVE VERSUS REINFORCEMENT VIEWS OF MOTIVATION: THEORY BACKGROUND

Two of the most dominant approaches to the study of motivation during the last two decades have been the drive theory (Hull, 1943; Spence, 1956) and expectancy theory (Lewin, 1938; Tolman, 1932). Both approaches are based on an assumption of instrumentalism, such that individuals are considered to be doing things for specifiable ends. The drive approach which belongs to the reinforcement group of theories (mechanistic theory) explains behaviour through S-R bonds and reinforcment histories. All behaviour is said to be

learned and solely a function of its consequences, so that behaviour toward an object will persist only when the individual performing the behaviour is adequately reinforced. In the absence or removal of either continuous or intermittent reinforcement, extinction of behaviour is said to occur. Expectancy theory, on the other hand, belongs to the cognitive group of theories. When explaining behaviour, cognitive theories posit than an antecedent stimuli is separated from the final behavioural response by a mediating cognitive event. These theories differ on what constitutes the cognitive act, as well as, on how cognition influences behaviour. The intervening cognition may be a perceived path to the goal (Lewin, 1938), an expectancy (Vroom, 1964), or a subjective probability of success (Atkinson, 1964).

Recently, a third approach has appeared in the motivation literature called the organismic-cognitive theory or the extra-expectancy theory (Adams, 1965; Deci, 1975). Similar to the other cognitive theories, the final behaviour is said to be separated from the antecedent stimuli by a mediating cognitive event. The difference between this theory and the other cognitive theories is that the extra-expectancy theory examines cognitive concepts, such as causal attributions and social comparisons, in addition to anticipatory and states.

Table 1 compares neo-behaviourist and behaviourist classes of reinforcement theories that explain behaviour with and without the use of intervening (but non-cognitive) constructs, while Table 2 compares the two classes of cognitive theories labelled "expectancy" and "extra-expectancy" theories. The "expectancy" classification includes the cognitive theories of Atkinson (1964), Lewin (1938), Porter and Lawler (1968), Rotter (1954), Tolman (1955), and Vroom (1964).

Table 1

SUMMARY OF REINFORCEMENT THEORIES[a]

Theory Classification	Theory Structure	Description
Behaviourist	S-R	Behaviour explained in terms of stimulus-response connections. Intervening hypothetical constructs are not employed in the analysis of action. Proponents include Skinner, Watson, other associationists, and many other behaviourists.
Neo-behaviourist	S-Construct-R	Behaviour explained in terms of stimulus-response connections. Intervening constructs are employed in the analysis of action, such as drive, incentive, etc. Proponents include Spence, Hull, Miller, Brown, and other neo-behaviourists.

[a]Adapted from B. Weiner, Theories of Motivation: From Mechanisms to Cognition (Chicago: Rand McNally, 1972).

The point of departure of the "extra-expectancy" theory from the reinforcement theories and particularly from other cognitive theories is in terms of the motivational constructs. Contrary to other cognitive theorists (e.g., Porter & Lawler, 1968; Vroom, 1964), the "extra-expectancy" theorists distinguish between behaviour that is intrinsically motivated and behaviour that is extrinsically motivated and argue that intrinsic and extrinsic motivation may interact rather than summate. Although the meaning of intrinsic motivation remains obscure (cf. Dyer & Parker, 1975; Scott, 1975), it generally refers to the pleasure or value associated with the content of the task itself, while extrinsic motivation refers to the value an individual derives from the structural context of the task, regardless of what intrinsic motivation actually is. The crucial issues are whether individuals

Table 2

SUMMARY OF COGNITIVE THEORIES[b]

Theory Classification	Theory Structure	Description
Expectancy	S-Cognition-R	Thoughts intervene between incoming information and the final behavioural response. The main cognitive determinant of action is an "expectancy". Proponents include Atkinson, Lewin, Porter, Rotter, Tolman, and Vroom.
Extra-expectancy	S-Cognition-R	Thoughts intervene between incoming information and the final behavioural response. Many cognitive processes determine action, such as information seeking, causal attributions, etc. Proponents include Adams, Deci, Festinger, Heider, Kelly, and Lazarus.

[b]Adapted from L.E.Pate, Cognitive Versus Reinforcement Views of Intrinsic Motivation. Academy of Management Review, 1978, 3, 505-514.

distinguish between intrinsic and extrinsic causes (Star, 1976) and how to determine the consequences of such distinctions (Calder & Staw, 1975).

2.2 THE BASIS OF INTRINSIC MOTIVATION

The roots of the intrinsic-extrinsic distinction can be traced back to the work of the first major cognitive theorists, Lewin (1938), Tolman (1932) and Rotter (1954). Their work directed psychology away from the exclusively behaviourist view of the drive theorists who posited a learned connection, an S-R habit strength, within the person, that is, they considered all motivation to be extrinsic. Although the early cognitive theorists recognised the intrinsic aspect of

motivation it was not considered of much importance (Table 3). Throughout the 1940s and 1950s the intrinsic concept was developed and pursued by need theorists who emphasised the importance of higher-order needs and cognitions. These included the needs for autonomy (Argyal, 1941), self-esteem and self-actualisation (Maslow, 1943), and mastery (Hendrik, 1943).

McClelland (1953, 1961) conceptualised that a source of motivation was the fulfilment of a need for achievement. Using a projective test, (based on the Thematic Apperception Test), to assess the strength of achievement motivation, McClelland found that situations involving competition or the testing of individual abilities produced the greatest motive arousal. Thus, the need to achieve is thought to be activated when performance can be readily evaluated as a success or failure, and the affect potentially associated with a task (the incentive value of success) is hypothesised to be a function of both the strength of this achievement need and the probability of success. The greatest satisfaction in accomplishment would therefore be derived by persons with high need for achievement who are successful in performing a difficult task (Litwin, 1966; Cook, 1970).

Also consistent with the notion that many people seek out or value accomplishment are the theoretical statements of White (1959) and Maslow (1954, 1970). White posits that individuals are motivated toward competence or mastery over their environments, and that they not only manipulate and explore their surroundings but strive to master them through higher levels of motor and mental co-ordination. In a similar vein, Maslow states that many individuals possess active

Table 3

SUMMARY OF EXPECTANCY THEORIES[C]

Theorist	Major Motivational Constructs						Resultant
Lewin et al. (1944)	Subjective probability of achieving desired outcome	X	(Valence) value of desired outcome			→	Force
Tolman (1955)	Expectation of achieving desired outcome	X	Demand level for given outcome	X	Level of given outcome	→	Performance Vector
Edwards (1955)	Subjective probability of achieving desired outcome	X	Utility of desired outcome			→	Behaviour Choice
Rotter (1954)	Expectancy of achieving desired reinforcement	X	Value of reinforcement			→	Behaviour Potential
Atkinson (1966)	Probability of achieving desired outcome	X	Motive level for achieving desired outcome	X	Incentive level of desired outcome	→	Resultant Motivation
Vroom (1964)	Expectancy of achieving desired outcome	X	(Valence) value of desired outcome			→	Force

[C] Source: A.K.Korman, The Psychology of Motivation. (Englewood Cliffs, N.J.: Prentice-Hall, 1974)

higher-order needs for esteem and self-actualisation. Esteem needs include a need for personal feelings of achievement or success, while a self-actualisation need is considered to be a striving for personal growth and development through one's own actions. Thus like McClelland's formulation of achievement motivation, both White's and Maslow's theoretical statements suggest that individuals may be motivated to perform certain tasks without an apparent need for external reward. If a task involves the opportunity for one to use new skills or is challenging to one's ability, it may therefore provide satisfaction in and of itself.

Further support for intrinsic motivation was provided by the neo-behaviourists, who, while working with non-human organisms, showed that many activities such as manipulation, exploration and information processing provide satisfaction in and of themselves. For example, in some early studies on animal behaviour, Harlow and his associates (Harlow, Harlow & Meyer, 1950; Harlow & McClearn, 1954) demonstrated that monkeys will learn to disassemble puzzles for no reward other than the opportunity to manipulate things. Similarly, Montgomery (1954) showed that rats will systematically select the path in a maze which leads to an opportunity to explore additional mazes. As a matter of interest, Harlow and his associates were among the first to use the term intrinsic motivation.

Also, in studies using human subjects it has been shown that the absence of stimulation and environmental change can lead to extreme discomfort. In one of the most vivid demonstrations of the need for stimulation, Bexton, Heron, and Scott (1954) employed college students to lie on a cot

for 24 hours a day in a sound-deadened room (with time out for meals and toilet needs). In the study visual and tactile stimulation were also minimised since subjects were required to wear translucent goggles and special gloves. Although the participants were paid extremely well for their time, few could tolerate the experiment for as long as two or three days.

In general, research has shown that in the absence of either external pleasureful-painful stimulation or basic homeostatic needs, an individual is not quiescent. In fact, there is some evidence that it is precisely when external pressures (e.g., hunger, thirst, sex) are minimised that play, exploration, manipulation, and curiosity behaviours are most likely to be manifested (Hunt, 1965). As a result of these findings, several psychologists have gone so far as to posit new human needs for manipulation (Harlow & McClearn, 1954), exploration (Montgomery, 1954), and curiosity (Berlyne, 1960). Tasks engaging these needs can be considered intrinsically motivating, since the activity provides value to the individual independent of any external sources of satisfaction. The real popularisation of the distinction did not occur until Herzberg (1959), introduced his distinction between motivator and hygiene factors.

The intrinsic-extrinsic distinction grew out of a need to explain behaviours not easily accounted for within an exclusively extrinsic framework. The current popularity of the intrinsic motivation notion attests to the fact that many aspects of human behaviour do not appear to be extrinsic in origin. The term "intrinsic" has often simply been applied to those aspects of behaviour which cannot be explained as

extrinsic; it has been applied as a catch-all explanation whenever behaviours occur which cannot be clearly linked to external outcomes.

2.3 CURRENT USES OF THE INTRINSIC-EXTRINSIC DISTINCTION

The conceptual ambiguity of the two terms leads to difficulty in comparing empirical results from different studies, and also in deciding whether the intrinsic-extrinsic distinction is really theoretically useful. In this section an attempt will be made to describe, categorise and compare various uses of the intrinsic-extrinsic distinction and to evaluate its usefulness.

The intrinsic-extrinsic distinction has been employed in a variety of ways. In an attempt to categorise these usages, Broedling (1977) classified them in two categories: as an individual characteristic or fairly stable personality *trait* on which people differ, and as a fairly changeable psychological *state*. Table 4 summarises this categorisation.

When used to characterise individual differences, the intrinsic-extrinsic distinction is most often used in organisational behaviour to describe a person's orientation toward his or her work. There are three common measures of work orientation described by Broedling (1977), each incorporating a somewhat different conception of the intrinsic-extrinsic distinction.

The first is the Job Attitude Scale (JAS), comprised of six intrinsic and ten extrinsic job related statements, presented in forced-choice pairs (Saleh, 1971; Saleh & Grygier, 1969). Although job orientation is distinct from job motivation (considered to be a process) or job

Table 4

SUMMARY OF MATERIAL PERTAINING TO THE

INTRINSIC-EXTRINSIC DISTINCTION[d]

Category of Use	Relevant Material in Literature
Trait	Measures of work orientation Job Attitude Scale (Saleh, 1971; Saleh & Grygier, 1969; Saleh & Pasricha, 1975) Survey of Work Values (Woolack et al,, 1971) Job Orientation Inventory (Blood, 1973)
	Related trait concepts Internal-external Control (Rotter, 1966) Origin/Pawn (deCharms, 1968) Inner-directed/Other-directed (Riesman, 1950) Achievement motivation (Atkinson, 1964) Level of need satisfaction (Maslow, 1943)
State-as a Function of Situation	Independent Variables Type of rewards (Porter & Lawler, 1967) Work content (Pritchard & Peters, 1974) Control of Work (Deci, 1975) Leadership style (McGregor, 1960) Reward contingencies (Deci, 1972; Deci 1975)
	Theoretical concepts/models Expectancy theory (Mitchell & Albright, 1972) Internal task goals (Campbell et al., 1970) Intrinsic Activity Value (Broedling, 1975; Turney, 1972) Attribution theory (Calder & Staw, 1975; Kruglanski, 1975a; 1975b; Kruglanski et al., 1975) Information-processing theory (Greene & Lepper, 1975)
State-as a Function of Interaction between Situation and Trait	Independent variables Task design and work values (Hulin & Blood, 1968) Content of tasks and work values (Robey, 1974) Job rewards and work orientation (Cascio, 1973) Perceptions of job content and desired level of need satisfaction (Hackman & Lawler, 1971; Hackman & Oldham, 1975; Lawler, 1969)
	Theoretical models Cognitive evaluation theory (Deci, 1975)

[d]Adapted from L.A.Broedling, The uses of the Intrinsic-Extrinsic distinction in explaining motivation and organisational behaviour. Academy of Management Review, 1977, 2 , 267-276.

satisfaction (considered a state), this intrinsic-extrinsic distinction is derived from the distinction made for motivation:

> *... a person is intrinsically motivated to perform some task if there is no apparent reward for the performance except the activity itself and the feeling of satisfaction or enjoyment which is derived from doing the activity. Alternatively, one is extrinsically motivated to perform the task if he does it primarily for some external reward (Saleh, 1971, p.1.)*

Job orientation is based on one's personal value system, with intrinsically-oriented people being more interested in job content and extrinsically-oriented people being more interested in job context (Saleh, 1975). It is postulated that intrinsically-oriented people tend to reject stability and routine, to have more initiative, and to be approach oriented. Saleh (1971) related this conception of the distinction to Maslow's need hierarchy and to Herzberg's two-factor theory. Growth needs are seen as underlying intrinsic factors and deficiency needs as underlying extrinsic factors. If Herzberg's theory is valid, it could also be expected that intrinsic factors are the main source of satisfaction and motivation, while extrinsic factors are the main source of dissatisfaction.

The second measure of intrinsic-extrinsic job orientation listed by Broedling is the Survey of Work Values (SWV), (Wollack, Goodale, Wijting & Smith, 1971), based on the presumption that people who value the Protestant Work Ethic are primarily intrinsically-oriented.

A third measure is the Job Orientation Inventory (Brief & Aldag, 1975). Organisational rewards are classified into ten categories, some intrinsic and some extrinsic. The format is forced-choice, with the intent to measure an

individual's preference for the various types of potential rewards.

While there is a fundamental similarity in purpose of these three scales, there are differences in their conceptions of the intrinsic-extrinsic distinction, and the three scales have been shown not to have convergent validity (Broedling 1977). The first two scales measure work values, while the Job Orientation Inventory (JOI) measures preference for type of organisational rewards. On the intrinsic dimension, the SWV includes the work groups as a vehicle while the JAS does not (Cascio, 1973).

The JAS and JOI are both ipsative, forced-choice scales which means that scoring high on intrinsic orientation necessarily means scoring low on extrinsic orientation and vice versa. This approach makes sense in an individual trait framework, since intrinsic-extrinsic is seen as a continuum on which individuals are located in only one spot. The ipsative model implies that people do not respond to both intrinsic and extrinsic motivators; therefore it does not represent a combinational model of intrinsic and extrinsic motivation (either additive or subtractive). Persons who are intrinsically motivated presumably will be relatively unaffected by the presence of extrinsic rewards and vice versa.

When the intrinsic-extrinsic distinction is employed as a characteristic of individuals, it is similar to five other personality trait distinctions and is often used to describe them (Broedling, 1977). One is Rotter's Internal-External Locus of Control (Rotter, 1966), which refers to the extent to which one person perceives events as under one's control (internal) or as a result of forces beyond one's

control (external). A similar distinction is de Charms' Origin/Pawn (1968, 1972), which describes the perception of controlling one's own behaviour versus having it controlled by outside agents. He proposed that man's primary motivation is to be effective in producing changes in his environment. Man desires to be the primary locus of causation for his or her behaviour and strives for personal causation. Personal causation, however, is not the motive for all behaviour. Rather, it is an over-arching or guiding principle upon which specific motives are built. The environment poses various kinds of problems (such as the necessity of obtaining food, achieving success, or gaining power) that define specific motives. In each case, however, the underlying dimension is the desire to manage the problem through personal causation.

Because of the desire to be the "origin" of his or her behaviour, one is constantly struggling against the constraint of external forces - against being moved like a "pawn". Thus, de Charms hypothesised that when a person perceives his or her behaviour as stemming from one's own choice (i.e., sees himself or herself as an origin), the person will cherish that behaviour and its results; when one perceives one's behaviour as stemming from external forces (i.e., sees himself or herself as a pawn), that behaviour and its results, though identical in other respects to behaviour of the person's own choosing, will be devalued.

De Charms used the origin-pawn dimension to distinguish intrinsically versus extrinsically motivated behaviour. A person is said to be intrinsically motivated whenever one experiences oneself as the locus of causality for one's own

behaviour (i.e., when the person sees oneself as origin). Conversely, the person considers himself or herself extrinsically motivated when he or she perceives the locus of causality for his or her behaviour as external (i.e., when the person perceives himself or herself as a pawn).

Riesman's inner-directed/other-directed distinction (Riesman, 1950) pertains to whether one acts in accordance with one's own beliefs or the expectations of those around one. A fourth related distinction is that of high versus low achievement motivation. Deci maintains that achievement motivation is a special case of intrinsic motivation (Deci, 1975), that is, achievement motivation differentiates out of the basic motivational propensity of needing to feel competent and self-determining in relation to the environment. In Atkinson's model (Atkinson, 1964), achievement motivation is conceived as a relatively stable personality trait because it is a function of two other stable traits namely the tendency to approach success and the tendency to avoid failure. The fifth distinction is that of higher-order versus lower-order need satisfaction on Maslow's need hierarchy.

The commonality between the intrinsic-extrinsic distinction and the five distinctions described by Broedling is that all are used to explain why some people in a given situation engage in certain classes of behaviours, loosely categorised as "growth" or "self-actualising" behaviours, more than do other people in the same situation. The other common thread is that all these distinctions relate directly or indirectly to a person's feelings of control of both self and environment.

The intrinsic-extrinsic distinction has been used to describe states of the individual, i.e., a person's motivation or satisfaction at a given time. According to Broedling's classification, there are two ways with which this broad category can be viewed: (a) motivation as a function of the characteristcis of the immediate situation; (b) as a function of the interaction between the situational characteristics and the individual personal traits. Let us examine each in turn.

There are five situational characteristics which have been identified by Broedling which can be considered to be determining factors of intrinsic-extrinsic states. The first major situational characteristic is the type of rewards available. Porter and Lawler (1967) distinguished between extrinsic rewards, which are controlled and awarded by the organisation, and intrinsic rewards, which are awarded to the employee by himself or herself.

The second important situational characteristic is job content, that is, how much of the job is intrinsically interesting. Based on the Porter and Lawler distinction between intrinsic and extrinsic rewards, Pritchard and Peters (1974) hypothesised that intrinsic job satisfaction should be more closely related to the actual work content than extrinsic satisfaction. They measured intrinsic and extrinsic satisfaction using the Minnesota Satisfaction Questionnaire (MSQ), which has intrinsic and extrinsic subscales. The results of this study provided considerable support for their hypothesis. Furthermore, it was found that intrinsic satisfaction was predicted better by the actual job duties than by the employees' interest in performing their job duties.

The third situational characteristic is job autonomy. Deci (1975) asserts that if employees do not perceive themselves controlling their own work, they will be in no position to receive intrinsic rewards, develop intrinsic satisfaction, etc. A fourth characteristic is leadership style - the extent to which supervisors employ participative practices allowing employees to exercise control over their work (McGregor, 1960).

The fifth situational characteristic in the work environment is the reward contingencies - whether or not job outcomes are contingent upon performance and perceived as such. (Deci (1972) found that when extrinsic rewards were contingent upon performance, they had a detrimental effect on intrinsic motivation, but, no such detrimental effect appeared when rewards were *not* contingent upon performance. In this experiment, as in most experimental work done by Deci on the relationship of extrinsic and intrinsic motivation, the operational definition of an intrinsically motivated activity is one which is done in the absence of any apparent external reward (Deci, 1975). Therefore, the measure of intrinsic motivation was the number of seconds of free choice time which the subjects spent engaged in the experimental task. This particular situational characteristic is one of the major controversial issues in the area of intrinsic-extrinsic motivation which will be discussed in greater detail later in this chapter.

In the organisational behaviour field, the effects of perceived contingencies have been stressed within the rubric of expectancy theory. In this theory, a person's behaviour is generally seen to bear some relation both to the expectations

that the person holds and to the subjective value of salient consequences that might occur following the action. In this context motivation is considered as a function of how much a person values the various potential outcomes of the job (valence). Whether one sees those outcomes as contingent upon job performance (instrumentality), and whether one sees oneself as able and willing to perform sufficiently well to obtain (or avoid) the relevant outcomes (expectancy). Although expectancy theory does not discount the influences of personality traits, it emphasises the immediate influences of the situation. For instance, an employee's perception of instrumentality is more dependent upon the factors present in the immediate work situation than on his or her generalised perceptions of internal-external control. Expectancy theory does not dwell upon the formative processes resulting in employees' perceptions. In this respect it can be contrasted to trait theories, such as Atkinson's which emphasises on the formation of achievement motivation and the underlying personality traits.

Because expectancy theory explains behaviour in terms of perceptions regarding job outcomes, it is primarily a theory of extrinsic motivation (Deci, 1975; Staw, 1976). This is particularly true of the original Vroom model (Vroom, 1964), which focuses on first level outcomes (e.g., money, recognition) and second level outcomes which can be obtained with first level outcomes (e.g., food, status). The fact that expectancy theory does not lend itself directly to explaining intrinsically motivated behaviour has resulted in many extensions and modifications. Among the most widely known alternative formulations are those proposed by Galbraith and Cummings (1967), Porter and Lawler (1967) and

Lawler (1971, 1973). In these formulations, each has noted that task accomplishment can be a function of an individual's behaviour independent of any externally mediated rewards and that job outcomes can be partitioned into intrinsic and extrinsic categories. However, this strategy does not resolve the basic difficulty. The concept of an "intrinsic outcome" is inherently contradictory to the theories of intrinsic motivation because the concept of *outcome* in itself is basically extrinsic. Moreover, there is no clearcut theoretical basis for deciding which outcomes are intrinsic and which are extrinsic, so, the decision is subjective to the investigator. The Dyer and Parker (1975) survey demonstrates that it is unreasonable to expect consensus across investigators in this regard. Furthermore, there exists a confusion among researchers regarding the concepts of instrumentality and expectancy which have raised some sharp criticisms about the theory, in particular its methodological shortcomings (House, Shapiro & Wahba, 1974; Wahba & House, 1974; Reinhart & Wahba, 1976). However, the varieties of operational approaches we find in the literature indicate that it is the conceptual formulations which should be questioned. When one considers the inconsistency of the findings of this body of studies (see House Shapiro & Wahba, 1974, for a review of empirical studies), it seems obvious that no fruitful developments can be expected from further research dealing exclusively or even primarily with the original variables of the theory without resolving the basic logical and methodological issues underlying the theory. The results of the studies by House (1971), House and Wahba (1972), House, Shapiro and Wahba (1974), Reinhart and Wahba

(1976), and Evans, Kiggundu and House (1979), all point to the theory's ability to explain at best a very limited portion of human behaviour.

Even if such problems are mitigated, the expectancy theory has another shortcoming based on its normative foundations. Expected value approaches argue that if people (a) knew all the alternatives, (b) knew all the outcomes, (c) knew all the relationships between actions and outcomes, (d) knew how they felt about these outcomes - they would use a rather complex formulation to come up with an estimate of the best choice of action (Behling et al., 1975; Mitchell, 1979; Pinder, 1977). This may be true for situations where contingencies between acts and outcomes and between first-level (extrinsic) and second-level (intrinsic) outcomes are clearly perceived by the individual, but in reality these situations are often ambiguous and the individual's choice mechanism does not follow the expectancy variables (Dachler & Mobley, 1973; also see Behling et al., 1975, for a further discussion of this issue). In short, the earlier optimism for the universality of the expectancy theory appears to have been dashed, and the need for a more limited perspective is indicated.

A large body of pertinent current research in social psychology is derived from attribution theory, that is the study of how people assign motives to themselves and to others. This work is similar to expectancy theory in that, while it does not discount historical influences and individual differences, its primary purpose is to explain a person's intrinsic-extrinsic state at a given time. Calder and Staw (1975) argued that the usual use of intrinsic to apply

to behaviours which are self-sustained, valued for their own sake, and only serve as a descriptive label, not as an explanation. Instead, they advocate use of intrinsic-extrinsic as a perception on the part of individuals to explain their own behaviour to themselves.

Kruglanski (1975a, 1975b) rejected the distinction of extrinsic pertaining to causes of behaviour which are external to the person, while intrinsic causes pertain to causes internal to the person. His distinction is that extrinsically motivated behaviour is exogenously-attributed, that is, behaviour which the person sees as a means to an end. Whereas, intrinsically motivated behaviour is endogenously-attributed, that is, seen as an end in itself. Kruglanski maintained that this distinction can better predict the effects of extrinsic rewards on intrinsic motivation. For example, one experiment found that money depressed intrinsic motivation only when money was not inherent to the task (a model construction game which is not typically played for money). Whereas money enhanced intrinsic motivation for a task where money was inherent to it (a coin toss game typically played for money) (Kruglanski et al., 1975).

Green and Lepper (1975) also utilised this means-end distinction in their information-processing approach to intrinsic and extrinsic motivation. Their goal was to account for the adverse effects of extrinsic rewards on intrinsic motivation, both in the immediate and in the long term. They distinguish between extrinsic incentives, which are not only means to an end, but also situation-specific, while intrinsic incentives, which are more general and are associated with task content and internal states. A person's

choice of behaviour at any given moment is a result of the sum of extrinsic and intrinsic incentives.

The other sub-category of uses suggested by Broedling (1977) are those which explain individual states resulting from an interaction between situational characteristics and personal traits. There is a growing tendency within organisational behaviour toward explaining work behaviour as interactive, rather than strictly in terms of either personal traits or situational characteristics. Hulin and Blood (1968) indicate that job performance and satisfaction are affected by the interaction of task design (situational) and work values (personal). Robey (1974) found an interaction between intrinsic-extrinsic work values, and the content of tasks, in terms of the subjects' satisfaction and partially in terms of their performance. Cascio (1973) hypothesised that job satisfaction would be highest for employees whose intrinsic-extrinsic value orientation (as measured by the Survey of Work Values), matched the intrinsic-extrinsic nature of the rewards present in the work situation. As expected, for the extrinsic employees, satisfaction with work environment factors was the most significant determinant of overall satisfaction, but satisfaction with the work itself was not found to be the most important determinant of overall satisfaction for intrinsic employees.

The works of Lawler, Hackman and Oldham (Hackman & Lawler, 1971; Hackman & Oldham, 1975; Lawler, 1970; Oldham, Hackman & Stepina, 1978) and Sims and Szilagyi (Sims & Szilagyi, 1976a, Sims, Szilagyi & Keller, 1976b) is another example of a conceptual model which postulates that motivation is the result of a situational-personal interaction.

In the Lawler, Hackman and Oldham framework, internal motivation (that which is mediated by the person and tied directly to job content) is a function of the interaction between an employee's desire for higher-order need satisfaction (trait) and the job itself (situation). The job content is considered in terms of five core dimensions: variety, autonomy, task identity, task significance, feedback, the Job Diagnostic Survey (JDS) has been developed to measure these dimensions. The Sims et al. (1976b) framework was an attempt to provide an improved perceptual measure of the task attributes employed by Lawler, Hackman and Oldham using the Job Characteristic Inventory (JCI). While there is empirical support for these conceptual models, the role of the higher order need strength trait may be more complex than originally thought (Brief, Wallace & Aldag, 1976). However, recently, the underlying dimensionality and the psychometric properties of the JDS and the JCI models for theory building have been seriously questioned by Aldag, Barr and Brief (1981).

The concept of intrinsic and extrinsic feedback might be one way of explaining the variety of results in job enrichment studies (Broedling, 1977). Intrinsic feedback is internally-sent, and extrinsic feedback is externally-sent. To the extent that the situation gives an employee the leeway to call upon skills and abilities which he or she values, and thus to rely primarily on intrinsic feedback, the employee will be intrinsically motivated.

Another major theoretical development which might be classified as interactive is Deci's cognitive evaluation theory (Deci, 1975). This was developed to account for the

intrinsic-extrinsic findings which have not been accommodated in the expectancy theory. Deci's work draws heavily on the works of de Charms (1968) and Bem (1972) and therefore can be considered to include both the effects of traits (Origin/Pawn) and situational characteristics.

The research conducted by Deci and associates (Benware & Deci, 1975; Deci, 1971, 1972a, 1972b, 1975a, 1975b, 1976; Deci, Betley, Kahle, Abrams & Porac, 1971; Deci & Cascio, 1972; Deci, Cascio & Krussell, 1975; Deci & Ryan, 1980) raises important questions regarding the effects of extrinsic rewards, such as pay, intrinsic motivation and subsequent behavioural acts. With this brief background, let us now turn to Deci's cognitive framework, which makes predictions counter to reinforcement and other cognitive theorists.

2.4 THE COGNITIVE EVALUATION THEORY

Deci (1976a) put forth a cognitive evaluation theory suggesting that under certain conditions, performance contingent reward systems may have a detrimental effect on intrinsically motivated behaviour. In Deci's words, "intrinsically motivated behaviours are those behaviours that are motivated by the underlying need for competence and self-determination" (Deci & Ryan, 1980, p.42). Specifically, he posits the following propositions:

> *Proposition I: One process by which intrinsic motivation can be affected is a change in perceived locus of causality from internal to external. This will cause a decrease in intrinsic motivation, and will occur, under certain circumstances when someone receives extrinsic rewards for engaging in intrinsically motivated activities.*
> *Proposition II: The second process by which intrinsic motivation can be affected is a change in feelings of competence and self-determination. If a person's feelings of competence and self-determination are*

> *diminished, his intrinsic motivation will decrease.*
> *Proposition III: Every reward (including feedback) has two aspects, a controlling aspect and an informational aspect, which provides the recipient with information about his competence and self-determination. The relative salience of the two aspects determines which process will be operative. If the controlling aspect is more salient, it will initiate the change in perceived locus of causality processes. If the informational aspect is more salient, the change in feelings of competence and self-determination process will be initiated. (Deci, 1975, pp.139-143)*

Essentially, Deci's argument is that individuals who are paid to perform an interesting task will attribute their behaviour to external forces and thus reduce their intrinsic interest in the task itself. Deci conducted a series of laboratory studies in which subjects, under varying degrees of contingent and noncontingent reward conditions, engaged in a presumably interesting task (such as completing the Soma puzzle), after which behavioural measures of the subject's intrinsic motivation were obtained. Subjects in most of these studies were students who participated in the experiment to satisfy requirements for an introductory course in psychology. The dependent measure of intrinsic motivation was the amount of time subjects continued to engage in the puzzle-completion task during a free-choice period following the experimental time period. Deci's assumption was that subjects' intrinsic motivation could be aroused during the experiment and that the presence of contingent versus noncontingent rewards would systematically alter their internal motivation states.

Deci's research has been criticised in a number of papers (Calder & Staw, 1975a; Hamner & Foster, 1975; Luthans, Martinko & Kess, 1976; Notz, 1975; Salancik, 1975; Scott, 1975; Staw, 1976). Salancik (1975) discusses two

procedural limitations to Deci's work: (a) his failure to report performance data as an indication of the difficulty of the task, and (b) his reliance on task persistence as the sole dependent measure. In an attempt to control for these limitations, Salancik tested the interaction effects of pay and level of performance of an interesting task by using an innovative road racing task; his results contradicted Deci's and suggested that subjects are less intrinsically motivated when the task is perceived as easy, relative to their ability.

Perhaps the most important controversy which surrounds Deci's work is the issue of contingent versus noncontingent compensation or rewards.

2.5 THE CONTINGENT-NONCONTINGENT COMPENSATION CONTROVERSY

Deci argues that contingent pay, relative to non-contingent pay, may have a deleterious effect on worker performance. This deleterious effect is assumed to be the result of contingent pay (and other non-verbal rewards) detracting from a worker's sense of being a causal agent in the activities in which he/she engages. In short, compensation influences a worker's intrinsic motivation to perform a task through a cognitive evaluation process such that contingent payment may reduce the intrinsic appeal of the task for a set of workers, relative to noncontingent payment for performing the same task.

Deci also suggests that organisations should pay to attract and ensure the participation of people in organisational activities, but that they should rely upon such techniques as job enrichment and participative management

to motivate performance by employees. These techniques should lead to enhanced feelings of competence and self-determination without an accompanying move from an internal to an external belief about the locus of causality.

Because Deci's proposals run counter to the more common assumptions of the effects of compensation on task motivation, it has stimulated much controversy regarding its contingency (see Jones & Mawhinney, 1977; and Guzzo, 1979). Our review of previous studies suggest mixed support for the outcomes predicted by the cognitive evaluation theory (see Table 5). However, a close examination of the methods employed by these researchers reveals a number of interesting methodological similarities and shortcomings. First, much of the published research has focused on the subject's interest in the task during a "time-out" period of typically 8 minutes duration. In an exception to these studies, Hamner and Foster (1975) noted that worker performance on a task possesses far greater relevance as an operational definition of intrinsic motivation than does a simple task persistence during a break period in that procrastination or other processes may be occurring during the free-choice period. Furthermore, if we are able to establish the relevance of Deci's propositions for laboratory behaviour during a contrived break period but, unable to establish the relevance for Deci's propositions for a more realistic setting, then the intrinsic-extrinsic issue must be viewed as relatively trivial with respect to real-world applications. Hamner and Foster (1975) also noted that quality of worker performance has been neglected as a dependent variable in research conducted in this area. Although not supportive of Deci's

Table 5

SUMMARY OF EMPIRICAL RESEARCH

STUDY	SUBJECTS	TASK	INDEPENDENT VARIABLE	DEPENDENT VARIABLE	SUPPORT FOR CET*
Arnold (1976)	University students	Enterprise	Noncontingent pay vs no pay	Free choice behaviour attitude questionnaire	No
Calder & Staw (1975b)	University students	Jig-saw puzzle	Interesting/dull task; contingent/ noncontingent pay	Attitude questionnaire	Yes
Deci (1971)	University students	Soma puzzle	Contingent/no pay	Free choice behaviour attitude questionnaire	Yes
Deci (1972a)	University students	Soma puzzle	Contingent/no pay	Free choice behaviour	Yes
Deci (1972b)	University students	Soma puzzle	Noncontingent/no pay	Free choice behaviour	Yes (null affirmed)
Deci & Cascio (1972)	University students	Soma puzzle	Noxious stimulus	Free choice behaviour	Yes
Deci, Cascio & Krusell (1975)	University students	Soma puzzle	Sex; positive & negative feedback	Free choice behaviour	Yes (negative feedback) Yes (positive feedback - males only)
Farr (1976)	University students	Erector set	Task; contingent; vs noncontingent pay	Performance attitude questionnaire (attributions)	No

Table 5 - Continued

STUDY	SUBJECTS	TASK	INDEPENDENT VARIABLE	DEPENDENT VARIABLE	SUPPORT FOR CET*
Farr, Vance & McIntyre (1978)	University students	Soma puzzle	Contingent/noncontingent pay, pay magnitude, locus of control, self-esteem	Performance free choice behaviour (attributions)	No
Fisher (1978)	Clerical help (female)	Hidden-word puzzle	Contingent/noncontingent pay, personal control	Free choice behaviour performance attitude questionnaire	No
Hamner & Foster (1975)	University students	Coding scores	Interesting vs dull task; no/noncontingent/ contingent pay	Performance attitude questionnaire	No
Kruglanski, Friedman & Zeevi (1971)	High school students	Creativity and memory task	Lab tour/no tour	Performance attitude questionnaire	Yes
Kruglanski, Alon & Lewis (1972)	Elementary school children	Competitive games	Noncontingent prizes/ no prizes	Attitude questionnaire	Yes
Lepper, Greene, & Nisbett (1973)	Preschool children	Draw pictures with magic pens	With/without expected reward	Free choice behaviour performance	Yes
Lepper & Greene (1976)	Preschool children	Puzzles	With/without expected reward; surveillance/ no surveillance	Free choice behaviour	Yes

Table 5 - Continued

STUDY	SUBJECTS	TASK	INDEPENDENT VARIABLE	DEPENDENT VARIABLE	SUPPORT FOR CET*
Lopez (1979)	Telephone workers	Telephone operator	Changes in perceived personal control, controlling aspect of rewards, and motivating potential score of job	Attitude questionnaire (attributions)	No
Notz (1975b)	University students	Join ROTC	Draft lottery number	Attitude questionnaire	Yes
Pinder (1976)	Elementary school children	Erector set	Interesting/non-interesting task: contingent/noncontingent pay	Free choice behaviour attitude questionnaire (attributions)	No
Phillips & Lord (1980)	University students	Lunar landing module (Interactive, computer controlled)	Information about competence and reward contingencies	Self-reports of intrinsic motivation: behaviour meaning of intrinsic motivation	No
Pritchard, Campbell & Campbell (1977)	University students	Chess problems	Contingent/noncontingent pay, time	Free choice behaviour attitude questionnaire	Yes
Ross (1975)	Preschool children	Play drum	Salience of reward	Free choice behaviour	Yes
Staw (1974)	University students	Join ROTC	Draft lottery number	Attitude questionnaire	Yes

Table 5 - Continued

STUDY	SUBJECTS	TASK	INDEPENDENT VARIABLE	DEPENDENT VARIABLE	SUPPORT FOR CET*
Staw, Calder, & Hess (1976)	University students	Jigsaw puzzles	Norms for payment, pay/no pay	Performance attitude questionnaire	No
Turnage & Muchinsky (1976)	University students	Sorting task: Arthur pencil point task	Interesting vs dull task: Choice/no choice of reward: contingent/ noncontingent pay	Free choice behaviour attitude questionnaire	No

* CET = Cognitive Evaluation Theory

propositions for quantity or quality data, their study is suggestive of a potentially useful distinction between these complementary indices of performance. The complementarity will be reconsidered shortly.

Further scrutiny of the Deci-related articles uncovers a tendency for more recent studies to avoid changing the pay scheme of a subject during the course of the study. With the exception of Deci (1971) and Pritchard et al. (1977), the bulk of the research has followed the real-world scheme of nesting workers within payment schemes. The change-of-payment-scheme studies may produce useful insights, and they may also help resolve the debate between the reinforcement theorists and the cognitive theorists.

It is also interesting to consider the variety of payment schemes which have been studied. Once again a trend appears to be existent such that more recent studies contrast contingent pay with noncontingent pay conditions. The studies by Deci (1971; 1972a; 1972b) contrasted contingent pay conditions with a no-pay condition, while only the Hamner and Foster study utilised all three conditions (that is, no-pay, contingent pay and noncontingent pay). The no-pay condition is perhaps of questionable value for the drawing of inferences in that, the subjects in the no-pay condition received some form of educational credit for participating in the studies (as did the contingently paid subjects). Strictly speaking, the contrasts which were performed were between an "educational credit plus monetary incentive" compensation condition, and an "educational credit only" compensation condition. The relevance of the findings from these contrasts for organisational processes is again questionable.

In addition, little attention has been devoted to studying the relative impact of pay schemes similar to those found in the operant conditioning literature on this area of work motivation. Scott (1975) argues that uncontrolled and differential conditioning was taking place in the research conducted by Deci and, that even the statistical procedures employed were inappropriate. Deci used difference scores between experimental and free-time periods minus the time spent on the puzzle by control group subjects, rather than simply the average number of seconds for all subjects in the experimental session, as Scott suggests. But Scott's attack centres on the conditioning aspects of Deci's experiments:

> *...not only were the reinforcing events different in the third study, but more importantly, they were also contingent upon persisting at the task rather than upon successful solutions of the task as in the first study. Deci concluded that social approval does not seem to impair intrinsic motivation as does money. However, we cannot be certain that the differences between the experimental group and the control group in any of the sessions were not due to differences in conditioning treatments prior to the observations (Scott, 1975, p.123).*

Scott also notes Deci's failure to provide sufficient information on the nature of these different conditioning treatments.

Scott's position is that suitably scheduled reinforcers increase the rate of responding although such behaviour-maintaining reinforcers are not easily discerned. He suggests that since, "An additional reinforcer may not produce behaviour incompatible with operants maintained by other reinforcers" then "other conditions may produce a significant increment in the probability or rate of operant responding" (Scott, 1975, p.127). Thus, even discarding the

methodological limitations surrounding Deci's data, the logic of his interpretations is still open to serious questioning. Essentially, Scott maintains there is a more logical (better tested) theory which is not consistent with Deci's interpretations:

> *It is possible that the addition of contingent reinforcers would produce a rather intricate interaction effect. On the one hand, the additional reinforcer might retard habituation to the response-produced sensory stimuli and might even enhance their reinforcing effectiveness by virtue of their being classically paired with the added reinforcing event. However, should the additional reinforcer be administered on an effective interval or ratio schedule, the consequent increase in rate of responding may result in a reduction in the reinforcing effectiveness of response-produced sensory reinforcers if they, in turn, occurred more frequently. The performance effects under these circumstances would be difficult to predict, and it may be that Deci's contribution was in alerting us to this particular complexity and its potential significance (Scott, 1975, p.127).*

Similar criticism and discussion of alternative reinforcement explanations of Deci's findings are forwarded by Luthans, Martinko and Kess (1976) - notably the impact of satiation, simulus control, reinforcement contrast and punishing consequences.

In response, Deci (1976b) argues that the essential disagreement between himself and others, centres on their discrepant philosophical orientations regarding the causes of behaviour - namely, the reinforcement-cognitive controversy. Deci also argues that Scott confuses intrinsic motivation with behaviour, a result of Scott's reinforcement position. In his cognitive evaluation theory (see Figure 1) Deci maintains that extrinsic rewards have two aspects - a controlling aspect and an informational aspect. Implicit in Deci's response to Scott is the notion that reinforcement theorists have focused narrowly on the controlling aspect

Figure 1

SALIENCE OF ASPECTS OF REWARDS

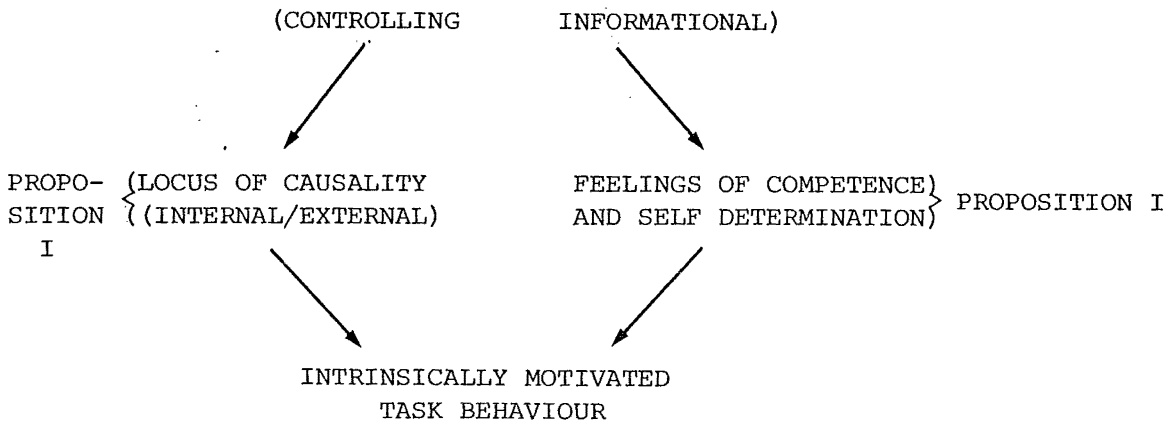

Figure 1. A schematic of the proposition of the cognitive evaluation theory

and have neglected the informational aspect. Conversely, the cognitive framework allows for the situation where extrinsic rewards, such as pay, serve as feedback about how past behaviour has been received, rather than as reinforcement per se. Deci (1975b) also provides performance data previously omitted from his published reports; these data show no significant differences between paid and unpaid subjects during the manipulation phase of his earlier (Deci, 1971; 1972) experiments.

A number of authors (e.g., Nord, 1969; Campbell, 1971; Jablonsky & DeVries, 1973) have been suggesting the incorporation of schedules of reinforcement other than the typical pay schemes employed by researchers in the cognitive approach. Mawhinney (1979) has argued that such an incorporation may be important to consider for developing greater understanding of the impact pay schemes have on work motivation. The results from such findings would improve the external validity of the research since there are people who perform organisational tasks under different pay schemes (e.g., commission agents, estate agents).

It is also interesting to consider the manner in which job design has an impact on employee motivation, satisfaction and performance. More specifically it is the assignment of boring, meaningless, and routine jobs that is viewed as responsible for poor motivation, satisfaction and performance. One of the biggest barriers to the implementation of job design is the problem of generalising from specific studies to actual organisational processes. In this direction, J.R. Hackman and his colleagues at Yale have designed the Job Diagnostic Survey Instrument to measure the degree to which certain conceptually independent task characteristics are present on particular jobs (Hackman & Oldham, 1975). This instrument quantifies the distinct job attributes of (a) skill variety, (b) task identity, (c) task significance, (d) autonomy and (e) feedback. These dimensions presumably coincide with certain experienced psychological states which, according to the developing theory, are critical for attaining and sustaining worker motivation, satisfaction and performance. Skill variety, task identity, and task significance span the state of experienced meaningfulness; autonomy covers experienced responsibility; while feedback taps the state called knowledge of results (Hackman & Lawler, 1971). Only positive relationships between perceived task attributes and worker satisfaction have been found by, among others Brief and Aldag (1975), Hackman and Oldham (1976), Stone (1976), Stone, Mowday and Porter (1977), and Orpen (1979). But, the task-design-performance relationship is uncertain. Recent reviews of the literature have noted that, "Affective and motivational responses appear to be more strongly related to task design"

(Pierce & Dunham, 1976, p.87) and, "It appears that task attributes play a more important role in influencing an employee's level of job satisfaction than performance" (Aldag & Brief, 1979a, p.50). It should be noted that the conclusions of these reviews were derived from field studies only. There are very few laboratory studies which have been designed that vary the task on all of the dimensions identified by Hackman and Lawler (1971) as being important determinants of a task. However, the research of Hackman and Lawler leads one to generalise that the more positive the internal properties of a task, the greater the level of intrinsic motivation. Thus, owing to the fact that intrinsic motivation is a relative perceptual variable (see Staw, 1974), it can be argued that since Deci used only one task (i.e., the Soma puzzle) in his experiments, a different set of conclusions might have resulted if the Deci studies had varied the task on one or more dimensions so that varying levels of intrinsic motivation could be studied.

Finally, little attention has been devoted to studying the relative impact of a variety of pay schemes, task designs on satisfaction, and performance as a function of individual difference variables. Mawhinney (1979) has argued that individual predispositions may be important to consider for developing a fuller understanding of the impact of contingent and noncontingent compensation. Also, Mawhinney (1979) argued against the practice of grouping subjects for purpose of analysis. While it is likely that the groupings of data may mask the importance of individual variability of responses, the use of meaningful individual difference variables, in conjunction with the technique of subgrouping analysis for large samples (Zedeck, 1971) should aid the identification of

systematic variance within what would otherwise be termed error variance.

Farr et al. (1977) explored the potential predictive contribution of the individual difference variables of locus-of-control (Rotter, 1966) and self-esteem (Ghiselli, 1971). The rationale for selecting these suspected moderating variables was in terms of high self-esteem individuals and external locus-of-control individuals being more resistant to the attributional shifts which are proposed by Deci's cognitive evaluation theory. Farr et al. (1977) failed to find evidence of moderating effects for either variable in a MANOVA test of a variety of performance and attitudinal dependent measures. Despite the fact that their study did not identify significant moderating effects, Farr et al. (1977) concluded that individual difference variables must be included in any model which is concerned with the effects of compensation and task design upon motivation.

Thus, we see that no previous research measured all of the variables necessary to adequately examine the process hypothesised by the cognitive evaluation theory. Without this knowledge, the interpretation of previous studies as supporting or refuting Deci's position should be regarded as more speculative than fact. In the sections to follow four possible conceptual resolutions of conflicting data emerging from the intrinsic-extrinsic controversy will be considered. The proposed resolutions are deduced from the differing foci of the approaches taken by protagonists and critics of Deci's cognitive evaluation theory and each will be considered as having implications for the present study.

2.6 THE INTRINSIC-EXTRINSIC CONTROVERSY: AN ATTEMPT AT A RESOLUTION OF CONFLICTING RESULTS

2.6.1 The Relationship Between Intrinsic and Extrinsic Motivation

Most approaches of motivated work behaviour such as the behaviouristic and expectancy theories, have suggested that intrinsic and extrinsic motivation are independent states. However, Deci's cognitive evaluation theory argues that intrinsic and extrinsic motivational states are inversely related. Thus, intrinsic and extrinsic attributions cannot be made simultaneously. An individual's own behaviour is hypothesised to be understood by the individual in the context of salient environmental (extrinsic) and internal (intrinsic) cues. When the environmental cues are salient, unambiguous, and sufficient to account for one's action, these cues will be seen as causing the observed behaviour. In the absence of external cues, the causes of one's own behaviour will be attributed to internal processes (Bem, 1972). If a given situation presents the individual with both salient internal and external cues, then the behaviour of the individual may be over-justified in the sense that there are too many cues for the behaviour present (Lepper et al., 1973). In such a case, it is hypothesized that the individual's perceived locus of causality shifts away from himself or herself and toward the external reward. This shifting of the causal locus serves then to undermine the individual's intrinsic interest or motivation toward the activity.

Deci (1972) had indicated that the negative effects of extrinsic rewards upon intrinsic task motivation occur

only when the rewards are contingent upon task performance. The shift in perceived locus of causality occurs only when task behaviours and rewards are closely associated. When rewards are noncontingent, Deci argues that the perceived locus of causality is less likely to shift and, thus, intrinsic task interest is unaffected.

As has been noted by Calder and Staw (1975) and Hamner and Foster (1975), it follows logically from Deci's (1975) cognitive evaluation theory that task interest and reward contingency ought to interact in their effects upon task motivation and satisfaction. Cognitive evaluation theory predicts that contingent financial rewards reduce an individual's intrinsic motivation for interesting tasks but that contingent pay enhances motivation for a boring or uninteresting task.

Several studies, (e.g., Calder & Staw, 1975; Farr, 1976; Hamner & Foster, 1975; Pinder, 1976) have attempted to examine the proposed interaction between compensation contingency and task characteristics. The findings of these studies have not generally supported the interaction hypothesis with the exception of Pinder (1976) but there exist limitations in each of these studies regarding the manipulation of the task characteristics which preclude definitive conclusions about the hypothesis. The Calder and Staw (1975) study included only nonpayment and non-contingent conditions so that the effects of reward contingency cannot be determined. Calder and Staw, as well as Hamner and Foster (1975) and Pinder (1976), varied task characteristics on an intuitive basis and not according to any theory of task design. Farr (1976), while varying task

characteristics according to the task design theory of Hackman and Lawler (1971), included contingent and non-contingent reward but did not include nonpayment condition for comparative purposes. Pinder (1976) also failed to include a nonpayment condition in his study.

For some years, a number of authors have been suggesting that some form of operant conditioning procedures be applied to the area of work motivation (Campbell, 1971; Jablonsky & DeVries, 1972; Nord, 1969; Opsahl & Dunnette, 1966). Several authors have proposed extensions of operant principles to the expectancy theory (e.g., Berger, Cummings & Heneman, 1975; Yukl, Wexley & Seymore, 1972), while others have contrasted predictions of expectancy and operant models of individual motivation (Mawhinney & Behling, 1973). However, no research testing the effects of any form of schedule of reinforcement, other than the typical fixed-ratio pay schedule, has been conducted with noninstitutionalised human adults, in settings directly applicable to Deci's cognitive evaluation theory. A form of partial schedule of reinforcement may have a different effect on motivation and should be investigated.

A major purpose of the study is to examine the interaction hypothesis more adequately than previous research has, by using an experimental design which includes a form of operant conditioning compensation scheme with the three payment conditions frequently used in such studies (i.e., nonpayment, contingent payment, noncontingent payment in the form of a fixed-ratio compensation scheme) and varied task characteristics according to the theory of task design of Hackman and Lawler (1971).

2.6.2 Implications for Task Performance

Another possible conceptual resolution of the intrinsic-extrinsic controversy focuses on differing perspectives of task performance.

Task performance is composed of two broad categories, quantity and quality. Advocates of the intrinsic effect point-of-view (e.g., Kruglanski, Friedman & Zeevi, 1971; Farr, 1976) consider primarily the impact of extrinsic contingent payment on the intrinsic motivation which a task can generate. Intuitively, we should not expect contingent reward per se to diminish the quantity of a worker's performance in that an incentive programme should have an arousal effect (Scott, 1976). Also, incentive compensation has commonly been found to enhance productivity (Lawler, 1971; 1973). Therefore, on logical and empirical grounds we may more reasonably expect to find that contingent pay plans contribute to the detriment of the quality of worker performance rather than the quantity of worker performance. In essence, it can be argued that intrinsic motivation effects are most closely related to the process of improving the quality of a single unit of work as a result of a worker lingering over the unit because of inherent appeal of the productive task itself. Reviews of job enrichment programmes (e.g., Lawler, 1969; Paul, Robertson & Herzberg, 1969) suggest that enrichment attempts positively affect productivity in only a minority of the cases. More recent field experiments (e.g., Lawler, Hackman & Kaufman, 1973) and simulation studies (e.g., Umstot, Bell & Mitchell, 1976) have also failed to find any effect of enrichment upon work quantity. Intrinsic motivation effects are therefore inversely related

to the process of quantity production. From this line of reasoning it appears that quality of worker performance may be a more likely candidate as the primary dependent variable of detrimental effects due to contingent compensation.

The critics of the intrinsic appeal point-of-view are primarily concerned with the quantity of performance indices. Armed with logic and data, the critics emphasize the incentive effects of contingent payment for quantity indices while ignoring quality indices. This emphasis on quantity is possibly a by-product of behaviour-oriented theorists to employing readily observable measures of worker performance. Quality of performance more typically, but not invariably, requires relatively more subjective indices of worker performance.

The proposed resolution may be stated as follows. A detrimental effect of contingent payment relative to noncontingent payment will be observed for quality of performance while an incremental effect of contingent payment relative to noncontingent payment will be observed for quantity of performance. The resolution suggests that both Deci's protagonists and detractors are partially correct in that each is looking at, and arguing about, different manifestations of the same underlying phenomena.

Unfortunately, the Deci-related studies to date have not extensively considered data pertaining to quality of performance. The single exception is a study by Hamner and Foster (1975). The Hamner and Foster study, however, employed a measure of quality (errors in the transcription of survey data to Fortran coding sheets) which is not a

reflection of lingering over the task because of its intrinsic appeal. Also, Hamner and Foster did not find significant evidence of the enhancement of quality and quantity of performance as a function of contingent payment versus noncontingent payment. Given that contingent pay has a variable effect on performance (Deci, 1972b; Lawler, 1971), this lack of significant performance calls into question the salience of the manipulation employed by Hamner and Foster.

Another observation from the studies related to the effect of task-related rewards upon quantity and quality is the duration of the task sessions. Most of the experiments which have task sessions of relatively short duration (maximum 60 minutes) have reported lower output in enriched task conditions. It is possible that length of task performance moderates the relative effectiveness of enrichment conditions. Task-related rewards or task enrichment may have a detrimental effect upon quantity production in the short run, but uncertain effect in the long run. This study will also attempt to have task sessions with relatively longer durations so as to test the relative effectiveness of the task characteristics.

It is arguable that the proposed resolution (i.e., quantity differences supports proposals for contingent compensation, while quality differences support proposals for noncontingent compensation) is perhaps due to the necessary consequence of quantity and quality being inversely related for most tasks. While this inverse relationship may be valid for many tasks, it should be possible to make an independent determination of the quantity-quality effects

as a function of compensation scheme via partialing procedures and increment of the duration of task sessions. Partialing quality from the quantity-compensation scheme relationship would reveal the relative impacts of compensation schemes on quality and quantity measures. The proposed resolution suggests that with an increment of task sessions duration (after controlling for quantity), quality of performance will be related to compensation scheme such that quality of performance will be greater in a no-pay, and noncontingent pay condition relative to a contingent pay condition. However, quantity of performance (after controlling for quality) will be related to compensation scheme such that quantity of performance will be greater in a contingent pay condition relative to a no-pay or a noncontingent pay condition. It is, of course, possible that only one side of the proposed resolution will be supported. If so, such a finding would add relatively more support to the position taken by either Deci's proponents or detractors. Failure to support either of the above propositions would diminish the case for the two groups.

2.6.3 Implications for Task Satisfaction

A further consideration, implied by Farr et al. (1977) and Mawhinney (1979), is the importance of task characteristics for understanding the relative impacts of various compensation schemes on worker satisfaction. A likely task moderator is the variation of the task based on Hackman and Lawler's (1971) core dimensions of jobs which seem to influence the feelings of workers toward their task. The dimensions are variety, autonomy, task identity,

task significance, and feedback. Oldham (1974) examined the relationship between these core dimensions and intrinsic motivation. He found that all of these dimensions, except task identity, were significantly related to intrinsic motivation as measured by a questionnaire technique.

Deci (1972) has advocated the use of such techniques as job enlargement and participative decision making as ways of intrinsically motivating workers. He feels that the use of these job design methods would allow an organisation to pay workers on a noncontingent basis, yet still maintain strong task motivation. Since task design and reward contingency may be varied independently, a factorial study employing these as independent variables would be informative regarding the relative usefulness of task design and pay contingency in affecting motivation and satisfaction. In order to test Deci's (1975) theoretical explanation of his results, it will be also necessary to gather data regarding subjects' attributions of performance and motivation causality. Measures of worker's satisfaction may also contribute to the understanding of the relationships among task and reward variables and intrinsic motivation.

2.6.4 Implications for Task Involvement and Higher Order Need Strength

Still another consideration, implied by Mawhinney's (1979) proposition and Farr et al.'s conclusions (1977, p.51), is the importance of individual differences for understanding the performance impacts of various compensation schemes. Two likely individual difference moderators are worker higher order need strength and job involvement. Worker

higher order need strength is suspected to have a differential relation with worker performance as a function of compensation scheme and task design. The differential relation is such that workers with weak higher order need strength will be more strongly influenced to provide high performance in response to an incentive condition relative to a noncontingent compensation condition under an unenriched task situation.

Consistent with these ideas, a recent focus of task design research and compensation scheme studies has been on the role of needs similar to Alderfer's (1972) growth needs. Since such needs roughly correspond to those at the highest levels in Maslow's (1943) need hierarchy, most researchers have in their work written in terms of higher order need strength. Examinations of the role of higher order need strength have generally not focused directly on the strength of the variables as the need for self-actualisation or the need for autonomy, but rather have considered desires for job characteristics (Stone, Mowday & Porter, 1980), and contingent pay schemes (Cherrington & England, 1980), which would seem likely to satisfy such needs. Since it is actually the strength of desires for specific job characteristics which would appear to be most relevant (Wanous, 1974), such a focus is appropriate in my view.

However, White (1978) has recently reviewed 29 empirical investigations of individual difference moderators and concluded that there was no substantial evidence showing that individual differences moderated the effects of either compensation schemes or job enrichment. Because the results were inconsistent and subsequent studies failed to replicate the results of earlier studies, White called for an end to

this line of research. While we generally agree with most of White's review, we also have some disagreements. We do not share his negative summary of some studies, especially those which used higher order need strength as the moderating variable. While the results of these studies were not entirely consistent, they were sufficiently impressive to warrant a closer enquiry. Furthermore, replications in other cultures have demonstrated significant moderating effects of the enrichment-satisfaction relationship. In South Africa, for example, Orpen (1976) found a positive association between job enrichment and job satisfaction among Blacks who lived in "White" cities long enough to acquire Western values. But Blacks who still espoused tribal values reported similar levels of satisfaction on specialised and enriched jobs. In short, promising moderators and their cultural supports should continue to be examined.

A more careful review of the moderator variable studies suggests that job satisfaction tends to be related to job structure and compensation schemes, when the moderating variable is a specific measure of the individual's desire for greater job enrichment and contingent pay (e.g., Wanous, 1974). However, the results become less consistent as the moderating variable becomes further removed from the individual's preference for specific job factors and becomes a more abstract personality measure, for example, locus of control (Sims & Szilagyi, 1976) or self-actualisation (Sims & Szilagyi,1976).

This same point has been made by Aldag and Brief (1979) who reached the following conclusion after reviewing many of the same studies reviewed by White:

> *In summary, the evidence ... serves to reinforce the contention made earlier that it is generally unnecessary and unwise to use crude proxies for what employees might want from their jobs. Instead direct assessment of individual desires is preferable (Aldag and Brief, 1979; p.92).*

For this direct assessment, Aldag and Brief recommended the use of the Higher Order Need Strength Measure B scale developed by Hackman and Oldham (1974).

In short, we are not ready to accept the conclusion that nothing moderates the effects of different pay schemes and job enrichment. The practical implication of disregarding individual difference moderators leaves unchallenged the claim that all workers want and will respond favourably to job enrichment and contingent compensation. Before the issue is abandoned, we think an assessment scale other than which has been suggested by Aldag and Brief ought to be examined. Recent empirical evidence (Griffin, 1982; White & Mitchell, 1979) do not support this recommendation. In the present study two indicators developed by Warr, Cook and Wall (1979) will be employed. The indicators of task involvement and higher order need strength, can then be examined as determinants of the effect of pay schemes and job enrichment on job satisfaction and performance.

In summary, the present study investigates Deci's (1972b, p.227), suggestion that intrinsic and extrinsic work motivation are inversely related and that noncontingent pay can have a relatively beneficial impact on worker performance. However, it is presently being proposed that this contingency effect, if obtained, will be more strongly evidenced on a quality of performance dimension rather than a quantity of performance dimension. Furthermore, individual difference variables of suspected importance for worker

performance (task involvement and higher order need strength) will be investigated in conjunction with compensation contingency and task-attribute relationships.

CHAPTER 3

SUMMARY OF PURPOSE AND HYPOTHESES FOR THE CURRENT STUDY

Deci (1971, 1975, 1976) has elaborated the distinctions between intrinsic and extrinsic motivation with specific regard to work or task motivation, he has developed what he terms a *cognitive evaluation* theory which attempts to provide a meaningful account of the psychological processes underlying intrinsically and extrinsically motivated behaviours. The cognitive evaluation theory is based upon the work of White (1959) and de Charms (1968) and is related to the general class of attribution theories (cf. Kelly, 1967) which are becoming popular in social psychology. According to this view, intrinsic motivation is manifested when the individual locates the cause of one's behaviour within oneself, while the extrinsic motivation entails the location of causality in the external environment.

The assertion of a distinction between the two kinds of motivation leads directly to two problems. First, what relationship exists between the two sets of motivational factors? Is it possible to be motivated by, or attribute one's behaviour to, both intrinsic and extrinsic factors at the same time or are they exclusive processes? Second, are there differences between intrinsic and extrinsic motivation, in terms of their effects upon task performance and satisfaction?

The present study will attempt to resolve these two problems. However, the principal purpose of the present research is to examine possible interactive and main effects of financial reward and task design upon task motivation, satisfaction, and performance. The specific hypotheses examined are:

Hypothesis I: Intrinsic motivation increases as a result of enrichment of task structure conditions (or task-intrinsic rewards).

Hypothesis II: Extrinsic motivation increases as a result of increases in the contingency upon behaviour of financial, consequence-related (or task-extrinsic) rewards.

Hypothesis III: Intrinsic motivation decreases as a result of increases in the contingency upon behaviour of financial, consequence-related rewards.

Hypothesis IV: Performance quantity increases as a result of increases in the contingency upon behaviour of financial, consequence-related rewards, but decreases as a result of enrichment of task structure conditions.

Hypothesis V: Performance quality increases as a result of enrichment of task structure conditions, but decreases as a result of increases in the contingency of financial, consequence-related rewards.

Hypothesis VI: Performance quantity increases as a result of *variable* increases in the contingency upon behaviour of financial, consequence-related rewards independent of task structure conditions.

Hypothesis VII: Task satisfaction increases as a result of enriched task conditions, but decreases as a result of unenriched task structure conditions.

Hypothesis VIII: Individual higher order needs strength and work involvement moderate the task perception-outcome relationships.

It should be noted that no specific hypothesis concerning the interaction of task content and task consequence factors were made despite the fact that one purpose of the present research is to examine such possible effects. It was felt that past research (e.g. Calder & Staw, 1975; Far, 1976; Hanmer & Foster, 1975) indicated that the predictions of main effects, rather than interactive effects, would be more likely to be supported.

CHAPTER 4

EXPERIMENTAL DESIGN AND PROCEDURE

In this chapter a detailed account of the experiment dealing with the effects of pay on task motivation in an organisational setting will be presented. In the subsequent sections, the subjects in the experiment, the independent and dependent variables, the experimental treatments, the Pilot Study and its results and the procedure of the actual experiment will be described in detail.

A reader of the preceding three chapters will have little difficulty in anticipating, at least in general outline, nature and purposes of the experiment to be described, since the methodological and theoretical groundwork has been presented there. The general purpose of the study, is to investigate interactions of intrinsic and extrinsic variables in the prediction of task performance, task satisfaction, intrinsic motivation, and task perception.

The 'laboratory' setting for the study is a simulated organisation in which each subject is the incumbent of a particular job. The situational (or independent) variables are organisational structure conditions and pay schemes that were made to vary systematically, according to the experimental design, the moderator variables are the measures for higher order need strength and task involvement, and the dependent variables are scores based on records of the subjects' performance in that simulated task and their attitudes towards the task.

Subjects were assigned in a random manner to task and pay conditions; these conditions had to do with (1) manipulation of task characteristics: enriched task vs. unenriched task, (2) types of pay schemes in which pay was made contingent upon performance vs. pay not contingent upon performance. Such an experimental approach to the study of task design and pay schemes in a complex organisation was possible only because the organisation was a simulated one. In other words, the experimental procedure required the use of a long, complex and realistic test.

The research is a multivariate experimental study. While it attempts to be rigorous in controlling conditions and assigning subjects to treatments, it also attempts to employ additional controls on unwanted sources of variations; it employs not one but many dependent variables; it looks for joint effects of experimental treatments as well as for main effects. The study also examines the possibility that the dependent variables will interact with moderator variables in influencing performance, satisfaction and task attributes.

4.1 THE SUBJECTS

The subjects who participated in the experiment and who provide the data for the study were all undergraduate students of the University of Canterbury, Christchurch. Since the main object of the research was to study inter-relationships among variables, it was considered not necessary to try to draw a sample that would be representative of the state population. It was important, however, to make

the sample quite varied with respect to the measures to be employed in the study.

4.1.1 Description of the Sample

At the time the subjects were selected, there were 7,044 students officially enrolled at the University of Canterbury of which 4,800 were enrolled as full-time students. These students were enrolled in eight major faculties: (1) Arts, (2) Science, (3) Law, (4) Commerce, (5) Engineering, (6) Music, (7) Fine Arts, and (8) Forestry.

Attempts were made to recruit volunteers from all the eight faculties as the subjects in the experiment. Only one of the eight faculties, Forestry, could not be represented in the sample because of lack of response from the students of that faculty. However, Forestry has the smallest number of enrolled students in the university and therefore would not affect the randomness of the sample. The faculties of Arts and Science have the largest number of students enrolled. The number of volunteer students showed interest in participating in the study met or exceeded the quota required for the experiment, and more than 150 students agreed to participate. Of this number, 116 actually came to the scheduled sessions. A small proportion of the participants were later eliminated from the study (N = 16) because of arriving very late for the scheduled sessions or refusing to continue with the experiment because of the no pay condition. The sample was made up of both sexes, altogether 50 males and 66 females made up the sample. Twenty subjects from this sample were used for the Pilot Study and 80 participants are the subjects of the research reported here (36 males and 44 females).

Most of the subjects could be described as "young adults", although some can be considered outside this classification. The mean age of those in the research sample was 20.23; the age range was between 17 and 30. Table 6 presents the number of subjects in each age within the age range of 17 - 30.

TABLE 6

AGE DISTRIBUTION OF SUBJECTS RECRUITED FOR THE STUDY (N = 116) AND THE ACTUAL RESEARCH SAMPLE (N = 80)

Age	Recruited Sample			Research Sample		
	Freq*	Adj Pct**	Cum Pct***	Freq*	Adj Pct**	Cum Pct***
17	8	7	7	4	5	5
18	29	25	32	23	29	34
19	23	20	52	18	22	56
20	12	10	62	8	10	66
21	18	15	77	10	13	79
22	9	8	85	4	5	84
23	3	2	87	0	0	84
24	2	1	88	1	1	85
25	3	2	90	3	4	89
26	3	2	92	2	2	91
27	2	2	94	2	2	93
28	3	4	98	3	4	97
29	1	1	99	1	1	98
30	2	1	100	2	2	100

* Absolute Frequency
** Percent Adjusted relative Frequency
*** Percent Cumulative Adjusted Frequency

Table 7 shows the percentage of the full-time male and female undergraduate student population who are enrolled in the eight major faculties of the university. So far as faculties are concerned, they are well represented in the sample with the exception of Forestry. In the sex categories, the sample contains relatively more female subjects than males (about 10 percent more females).

TABLE 7

PERCENTAGE OF FULL-TIME UNDERGRADUATE STUDENT POPULATION AND THE RESEARCH SAMPLE IN THE UNIVERSITY OF CANTERBURY (POPULATION, N= 4,800; SAMPLE, N = 80)[a]

Faculty	Male		Female		Totals	
	Population	Sample	Population	Sample	Population	Sample
Arts	10.17	7.50	15.83	18.75	26.00	26.25
Science	21.33	20.00	8.27	12.50	29.60	32.50
Law	5.21	2.50	3.31	6.25	8.52	8.75
Commerce	11.21	6.25	4.67	8.75	15.88	15.00
Engineering	14.19	5.00	0.69	1.25	14.88	6.25
Music	0.46	1.25	0.73	3.75	1.19	5.00
Fine Arts	1.27	2.50	1.50	3.75	2.77	6.25
Forestry	1.12	0	0.04	0	1.16	0
Totals	64.96	45.00	35.04	55.00	100.00	100.00

[a] The figures for the number of full-time undergraduate students enrolled at the university have been obtained from the University of Canterbury official enrolment records and are for the year 1983.

4.1.2 Recruitment of Subjects

All subjects were volunteers and were recruited by means of a "help wanted" advertisement and by a "direct approach" method. The "help wanted" advertisement called for paid volunteers for a two-hour decision-making exercise. The advertisements were posted on notice boards around the campus. These advertisements announced that volunteers who wished to participate in this study required no special skills and "financial incentives will be provided depending on what you do".

The "direct approach" method involved a number of tutorial instructors in various departments. The tutorial instructors for Biology, Chemistry, Economics, Mathematics,

Psychology and Sociology for undergraduate tutorials were asked to read out an announcement prepared by the experimenter at the beginning of each class. The announcement read as follows:

> *"A number of volunteers are required to participate in a research on decision-making being done by a Psychology student for his Master's thesis. Financial incentives will be provided to the participants depending on what you do. Anybody interested please write down your name and phone number on the paper which will be circulated. You will be contacted in the near future by Mr. Rashad Fikree for further information about the exercise."*

The volunteers were later contacted by telephone and the date and time for their attendance was arranged.

4.2 CHOICE OF LABORATORY METHOD

It is perhaps paradoxical that observation of behaviour in real life is not an ideal method for the scientific study of human behaviour. Such a method is generally unsatisfactory not only because of its inadequacies from a measurement point of view, but also because it does not permit the scientist to control conditions in such a way as to permit the researcher to rigorously attribute variation in performance to situational variables. It also does not give the researcher the ability to assign subjects to treatments according to a prearranged plan; consequently one can never be sure that covariation of behaviour with situations is attributable to the situations or to some sort of selective factors that tend to put different kinds of people in the different situations. For such reasons the researcher preferred to take his hypotheses into the laboratory where he can control the experimental variables and randomly assign subjects to treatments.

Laboratory methods ordinarily involve a good deal of simplification. In studying certain kinds of problems, especially in the areas of organisational behaviour, it may be necessary to employ situations involving considerable complexity. If one wishes to study experimentally variations in organisational climate conditions, for example, the laboratory setting cannot be simple. Or in situations where the behaviour under study could easily be produced voluntarily but we wish to know to what extent it will occur spontaneously, we may need a very life-like laboratory situation. The development of an elaborate situational test may provide a way to retain an adequate amount of complexity and realism in an experimental situation while still permitting the experimenter to control conditions rigorously and to assign subjects to treatments in a manner consistent with the design of the study.

Of course, when choosing a laboratory method one encounters issues of internal validity and external validity (Campbell and Stanley, 1968). The first issue refers to consistency or replicability of results within an experimental situation, while external validity refers to the generalisability of results, that is the extent to which results of an experiment can be extended from artificial laboratory settings to complex real-life situations. Laboratory studies appear to be less vulnerable to criticisms regarding their internal validity. It is possible to partly overcome some of the criticisms directed towards laboratory studies regarding their external validity by increasing the realism of the experimental situation (Aronson and Carl Smith, 1969). Vroom (1969), in discussing a similar point, suggests that

the most promising approach is "to increase the authenticity of laboratory simulations of organisations..." (p.205). Thus, another reason for the choice of a laboratory method of research is because of its high internal validity and the possibility to maximise external validity.

4.3 CHOICE OF TASK VARIABLES

The lack of a taxonomy of situations and situational attributes is no less a problem in dealing with organisations than in any other area of behavioural science. Studies of organisations have involved a wide variety of concepts and constructs; autocratic vs. democratic leadership styles, consideration and initiating structures as attributes of executive performance, degrees of supervision of performance, kinds of delegation of authority, informal and formal channels of communication, centralisation vs. decentralisation of authority, and participatory management have all been the subject of investigation in studies within organisational psychology. The organisational characteristics most frequently studied are size, organisational structure, systems complexity, leadership patterns, and goal direction. Such attributes of organisations used in these studies refer to an organisational structure which is characterised by a set of dimensions or properties which describe that organisation and which,

(a) distinguish the organisation from other organisations;

(b) are relatively enduring over time; and

(c) influence the behaviour of people in the organisation.

The structure of an organisation, as conceived in this investigation, is a set of expectancies or understandings, held in common by most of the members of an organisation, as to a kind of uniformity in behaviour that is seen as appropriate in that organisation; these expectations presumably result from perceptions of uniformities in behaviour on the part of the organisation members, from overt or subtle declarations of policies of the organisation, from a uniform background of experience on the part of the members, or from a combination of these. A paradigm that would comply with this conception is the simulation of a task based on the job characteristics model proposed by Hackman and his associated (Hackman & Lawler, 1971; Hackman & Oldham, 1976). This paradigm would exclude the more prosaic kinds of organisational variations, such as mere size or type of physical plant, and suggests ways of representing different structures in a simulated organisation through alterations in the job characteristics.

As mentioned earlier, the job characteristics are based on five core dimensions: skill variety, task identity, task significance, autonomy and job feedback.

The two task structure conditions used in this research represent a variation in the five core dimensions. One variation is high on these dimensions and is called the *enriched* task, while the other, the *unenriched* task, is a similar task which is designed to be low on these dimensions.

The two structure conditions used in this research were chosen partly because it seemed feasible to represent them clearly in a simulated organisation and partly because they seem to represent the variety of concepts that have

been used in much research on work motivation in organisations. Two task structure conditions were chosen instead of one in order to make it possible to discover any interactions between the two structure conditions that might occur.

4.4 CHOICE OF PAY VARIABLES

Pay alone no longer seems as important a motivator and satisfier as it was at one time. In the six theories of motivation listed in Table 3 (p.14), money was not considered as the only incentive in any of them, although Herzberg did suggest that it could serve as a dissatisfier. To investigate the effects of monetary incentives on the two task structures, pay was chosen as the independent variable.

The different pay conditions used in this research were chosen in order to attempt to resolve the contingent-noncontingent compensation controversy which has been discussed in detail in Chapter 2.

The first pay condition, the *no pay* situation where subjects were not promised any form of financial rewards, was introduced to serve as a control to check the impact of rewards on task variables. This condition was also designed to simulate voluntary organisations where people perform organisational tasks in the absence of any monetary compensation. The subjects received no pay and participated on purely voluntary basis. They did not feel obligated to participate because the experimenter was in no way associated with scholastic assessment of the students who served as subjects.

The second pay condition, the noncontingent pay scheme where the subjects received a *fixed amount* of pay on an hourly basis for their participation in the study, was chosen to discover the interactions between this pay scheme and contingent pay schemes.

The third and the fourth pay conditions were both based on a contingent paradigm. One contingent pay group received pay on a *fixed-ratio* based upon individual performance or "piece-rate" pay scheme. Their pay was based on a fixed ratio dependent on the number of points scored on the task. The participants in the other contingent pay condition received pay based on individual performance but, it was varied on a *variable amount-variable ratio* (VA-VR) pay scheme, that is, pay varied on random basis for points scored on the task.

The two task structure conditions and the four pay schemes were assigned to subjects in such a way as to form a 2 x 4 treatment design, as will be described in the section to follow.

4.5 DESIGN OF THE STUDY

The experiment was carried out in a simulated organisation - the New Plymouth Community Development Programme (NPCDP). The simulated job was either that of Executive Director or the Management-Employee Relations Officer of NPCDP, depending on the assigned treatment. The role position required no knowledge of technical skills or information beyond that already familiar to all of the subjects through being a member of society.

Most of the experimental data were obtained during two experimental sessions. During the experiment each subject

served either as the Executive Director or as the Management-Employee Relations Officer depending on the assigned treatment. All subjects faced exactly the same task, worked under the same experimenter, and (except for the experimental variations in pay and task structure conditions) worked under the same conditions. Subjects were either paid or not paid for the job depending on the assigned treatment. The scores obtained from the records of performance made by the subjects and their responses to attitude questionnaires, provided the dependent measures of the study.

Prior to the first session, subjects responded to a biographical questionnaire and at the end of each session they responded to a battery of attitude questionnaires regarding the task characteristics and their attitude toward the task. Also included were measures for the moderator variables, task involvement and higher order need strength.

At the end of the second session, the subjects were asked to respond to a forced-choice question which provided another measure for intrinsic motivation. The question asked the subjects whether they wished to volunteer for a similar experiment to be held in the very near future and to provide reasons for their affirmative or negative response.

As we have already seen, there were two dichotomies, representing two kinds of task structure conditions and four kinds of pay schemes. The structure dichotomy had to do with being enriched in task characteristics vs. being unenriched in these characteristics. The pay dichotomy was divided into four types of pay schemes: no pay, noncontingent pay fixed-amount, contingent pay fixed-ratio, contingent pay variable amount-variable ratio. Half the subjects were

assigned to the enriched task and half to the unenriched task, while one-fourth of the subjects were assigned to each type of pay scheme. The two treatment dichotomies overlap, as shown in Figure 2, to form eight treatment conditions or a 2 x 4 factorial design.

TASK STRUCTURE CONDITIONS

Pay Schemes	Enriched Task	Unenriched Task
No Pay	A	B
Fixed-Amount Pay	C	D
Fixed-Ratio Pay	E	F
Variable Amount-Variable Ratio Pay	G	H

Figure 2 The Task x Pay combinations

Cell A, for example, contains subjects who experienced enriched task structure but no pay, while Cell H represents subjects who received the unenriched task in which the pay scheme was based upon a variable amount-variable ratio schedule. This design makes it possible to study joint effects of task structure conditions and pay schemes as well as their main effects.

The task structure conditions were presented to the subjects by varying the material used to describe the background information related to the role of the participant in the simulated organisation. The material was presented to the subjects just before the task was assigned. The task

was an in-basket exercise with ten items. The background materials were intended to inform subjects about the nature of the New Plymouth Community Development Programme generally and their role in the organisation in particular. The items in the background information included such items as organisational chart which specifically indicated their position in the organisation, a biographical description of the role of the person they were to represent and a brief biographical information of two colleagues and the secretary with whom they would most frequently interact. The task is described in detail in the next section.

The two different versions of the in-basket exercise were specifically written to vary on the five task dimensions creating the two structure conditions. The first version, the enriched task, was structured to be high on task identity, variety, significance, autonomy and feedback. This was done by:

1. Writing the 10 item exercise so that there appeared to be three complete organisational problems.
2. Varying the nature of the issues to be solved in each item.
3. Stressing the importance of the job.
4. Delegating to participants in the exercise all responsibility for decisions.
5. Creating a position in the simulated organisation with which the participant could easily identify with.
6. Providing feedback to the participants about their performance on the in-basket exercise.

The second version was written to be low on these dimensions. This was done by:

1. Revising the task identity so that the subjects were to respond to the 10 items as if they were separate problems instead of overall problems.
2. Presenting each item as an information collection item.
3. Presenting the job as unimportant and the incumbent holds an insignificant position.
4. Limiting the subject to data collection and advising only.
5. Creating a position in the simulated organisation which had a very limited role with which the participant may find difficult to identify with.
6. Withholding feedback to participants about their performance on the in-basket exercise.

4.6 CHOICE OF TASK

There are at least two ways in which a subject may serve in a social-psychological experiment. One method involves some degree of role-playing. The subject in a psychological experiment typically knows that he or she is serving as a subject and that their behaviour is being observed, although the participant would not ordinarily be told the true purpose of the experiment. One extreme of role-playing would result from the subject being instructed to be someone else (such as an employment interviewer or a shop steward), and being asked to try to behave as that person would. At the other extreme, the subject would be assigned no such specific role, but he or she would nevertheless by implication play some role by virtue of his or her

being an experiment subject and thus representing mankind, or university student, or some other population for the benefit of the experiment. Role-playing must be involved to some degree whenever a person knows that he or she is a subject in a psychological experiment, and their behaviour may therefore, be influenced to some degree by their conception of how the person he or she is representing ought to act.

There is evidence that such conceptions can influence behaviour in experiments, either because the subject wants to make a good impression (Riecken, 1962) or wants to help the experimenter get the results the subject thinks he or she is seeking.

In order to avoid contaminating the results of an experiment with subjects' "lay theories" or conceptions about how people ought to behave in certain roles, or how the experimenter expects them to behave, psychologists sometimes employ deception, so that subjects can be put into standard experimental situations without their knowing that they are experimental subjects. Thus behaviour can be elicited that is spontaneous and free from any influences attributable to prior conceptions about how people ought to behave in a particular role.

Use of deception is the other method frequently used by researchers. This method is of course not without its problems, including the ethical problems involved in misrepresenting situations to individuals. Even what appears to be an innocuous deception may in some instances result in loss of dignity on the part of subjects, and may in some instances result in emotional upset or discomfort, even when

attempts are made to alleviate such reactions by attempts at debriefing.

One of the principle reasons for the choice of an in-basket exercise as a task for this study is its capability of eliciting typical behaviour without the need to deceive the subject, because the range of possible responses is very broad and the instructions provide such little structure that the subject is not likely to guess what independent variables are being measured. The subject is asked merely to "be the executive" or whatever the role position may be and do what he or she deems appropriate, as though they were actually on the job.

The type of situational test employed in this study, the in-basket exercise, is a rather elaborate, realistic situational test that simulates certain aspects of an administrator's paper work. Generally, the in-basket consists of the letters, memoranda, records of incoming telephone calls, and other materials that have supposedly collected in the in-basket of an administrative officer. The participant in the exercise is given appropriate background information about the organisation in which he or she is to be employed and appropriate office materials, such as memo pads, paper, pencils, pens and paper clips. The person is instructed that he or she is the incumbent of the administrative job and that they are to respond to the materials in their in-basket as though they were actually on the job, by writing letters, memoranda, writing notes or reminders for themselves, or doing anything else that is deemed appropriate. The participant is asked not to pretend to be someone else, but to behave as though they were

actually the incumbent of the job in that situation.

Compared with the tasks used in the studies reviewed in Chapter 2, the in-basket exercise is more realistic in the sense that it accurately mirrors some aspects of the real world. Table 8 provides a brief description of the tasks used by researchers in the studies reviewed previously. Most of the tasks employed by these researchers appear to be rather simplistic and unrealistic. Aronson and Carlsmith (1969) made a distinction between forms of "simulations" used in social-psychological experiments, between what they call *experimental realism* and *mundane realism*. Although the simulations employed by most of these researchers may reflect some aspects of the real world, they appear to be boring and dull and could well be classified as "mundane realism". On the other hand, sufficient evidence exists (see Frederiksen, Jensen & Beaton, 1972), which shows that in-basket exercises portray a more realistic situation than other simulations, besides it interests and captivates subjects.

Furthermore, in-basket exercises are well adapted for the purpose of this study because they can be manipulated by varying the background information presented before the test begins to create a different perception of the organisation. One can vary the organisation experimentally in many ways, for example, by changing the form of organisation as portrayed by the organisational chart, by changing the personalities of the subjects' superiors or peers as depicted in the background materials; or by changing the purposes or nature of the organisation. In the present study, the experimental modifications of the simulated organisation had to do with the task characteristics.

TABLE 8

DESCRIPTION OF TASKS EMPLOYED BY RESEARCHERS IN STUDIES LISTED IN TABLE 5 (p. 35)

Study	Subjects	Task	Description of Task
Arnold (1976)	University students	Enterprise	A computer game which simulates the conditions of the T.V. programme Star Trek. The subject is seated at a computer terminal equipped with a video console and is required to play the role of the captain of the Starship Enterprise.
Calder & Star (1975b)	University students	Jig-saw puzzle	Two types of jig-saw puzzles are used for two different groups of subjects: one gets a blank puzzle and the other with interesting pictures (chiefly Life & Playboy magazine centrefolds).
Deci (1971, 1972a 1972b)	University students	Soma puzzle	A commercially produced puzzle that has seven differently shaped, three-dimensional pieces, each of which is made to look as though it is composed of three or four one-inch cubes. Subjects in these studies used these puzzle pieces to reproduce various configurations that is drawn on paper for them.
Deci & Cascio (1972)	University students	Soma puzzle	Same as above.
Deci, Cascio & Krusell (1975)	University students	Soma puzzle	Same as above.
Farr (1976)	University students	Erector set	Similar to task used by Pinder (1976).
Farr, Vance & McIntyre (1978)	University students	Soma puzzle	Similar to task used by Deci (1971, 1972a, 1972b).

TABLE 8 - Continued

Study	Subjects	Task	Description of Task
Fisher (1978)	Clerical help (female)	Hidden-word puzzle	Letter matrices in which words appear vertically, horizontally or diagonally. Subjects task is to locate and circle the words embedded in the matrix which appear on the word list accompanying each task.
Hamner & Foster (1975)	University students	Coding scores	Two types of coding tasks are used: Interesting Task: Subjects are asked to code and transfer scores from a sexual attitude survey (with faked responses) of university female students to a Fortran Work Sheet, Uninteresting Task: Subjects are asked to code and transfer scores from a recent maths survey (with faked responses) of university female students to a Fortran Work Sheet.
Kruglanski, Friedman & Zeevi (1971)	High School students	Creativity and memory task	Subjects perform four tasks: 1. Subjects suggest as many titles as possible for a given literature paragraph. 2. Subjects compose a story using as many words as possible from a list of fifty words. 3. Subjects recall information after hearing a passage read from a newspaper. 4. Ebinghaus recall test of nonsense syllables.
Kruglanski, Alon & Lewis (1972)	Elementary school children	Competitive games	Subjects participated in a series of competitions: "follow-the-leader", "word construction", "song matching", "discover the rhyme", and "speed writing".
Lepper, Greene, & Nisbett (1973)	Preschool children	Draw pictures with 'magic' pens	Kindergarten children are asked to draw with multi-coloured felt-tipped drawing pens.

TABLE 8 - Continued

Study	Subjects	Task	Description of Task
Notz (1975)	University students	Join ROTC	Similar to Staw (1974)
Pinder (1976)	Elementary school children	Erector set	Subjects construct a large "asymmetrical erectocar" based on a model car designed for the study.
Pritchard, Campbell & Campbell (1977)	University students	Chess problems	The task consists of a diagram of a chess board with a number of white and black pieces printed on it. The pieces were printed in such a way that the white could force checkmate in two moves regardless of any legal moves made by the black. The subject assumes the role of the player having the white pieces and has to find the correct moves leading to a checkmate.
Ross (1975)	Preschool children	Play drum	Kindergarten children are asked to play a drum for 5 minutes!
Staw (1974)	University students	Join ROTC	A field study involving the Reserve Officers Training Corps. Students were questioned whether they joined the organisation to avoid being drafted or to receive rewards.
Turnage & Muchinsky (1976)	University students	Sorting task and Arthur Pencil Point task	Sorting task: Placing many series of punched cards on appropriately matched configurations on a sorting board. Arthur Pencil Point Task: Manipulating colourful cardboard templates to reproduce varied geometric designs.

4.7 THE SETTING FOR THE IN-BASKETS

For both versions of the in-basket exercise, each subject assumed the name and position of John W. Waitere. In the enriched version John W. Waitere was the Executive Director of the New Plymouth Community Development Programme (NPCDP) while in the unenriched version John W. Waitere was the Management-Employee Relations Officer. Since all subjects were not familiar with the policies, rules, protocols, forms, terminology and so on, of such organisations and because the NPCDP is a fictional agency, they had to be given information about the job in which they were to work during the two hours of the study.

The New Plymouth Community Development Programme was (supposedly) set up in 1977 through government and local body grants. It is a youth training and recreation organisation which is responsible for the promotion of harmonious social relationships among youth and to cultivate enjoyable interests and activities. Its other responsibilities were to foster physical and psychological health; to encourage constructive and caring behaviour; to help the youth to develop suitable and necessary skills and experiences, and to provide support for educational purposes.

In both versions of the in-basket Mr. John W. Waitere was appointed to the position two years ago, after the former employee had to retire due to a sudden illness.

In the enriched structure, Waitere, the Executive Director, is in charge of the NPCDP, with its centre in the downtown area of New Plymouth and two other branches in Kyle Street and Barret Street. Waitere has three immediate subordinates: Henry Snowell, Planning and Research Director;

William H. Stanley, Personnel Director; and his secretary, Mary Brown. He has no peers or superiors but is in charge of twenty-seven staff members responsible for the other activities of the youth centre. In all, Waitere has thirty subordinates working for the NPCDP.

On the other hand, in the unenriched task structure Waitere is the Management-Employee Relations Officer, not a significant position, merely a link-in-the-chain of the NPCDP organisation. The position has been created for publicity purposes to portray that NPCDP has members from the minority group employed on the managerial staff. He has five superiors, the President of NPCDP, Mr. Burt Watson; the Vice President, Mr. Jack Martin; the Director of Finance, Mr. Bernard Miller; the Training and Development Director, Mr. Gerry McFarlane; and the Executive Director, Mr. Sam Lasler. It is with Mr. Lasler that Waitere is responsible to for the discharge of his duties.

In the unenriched version, Waitere's immediate subordinates are two officers: the Planning and Research Officer, Mr. Henry Snowell; and the Personnel Officer, Mr. William H. Stanley. Each of these officers are staffed by ten or more employees responsible for different functions of the youth centre. In all, Waitere is employed in an organisation with a staff of thirty, including his secretary, Mary Brown. Similar to the enriched task only information about three members of the staff are given; that of Mr. Snowell, Mr. Stanley and his Secretary, Mary Brown.

In constructing the in-baskets, care was taken to keep personalities of various staff members consistent within each in-basket and from one in-basket to another. Also, in

order to moderate the complexity of the task, the number of staff members with whom Waitere had to interact was limited to three. As Waitere goes through the in-basket items, he rapidly learns that some of the subordinates are excellent, some mediocre, and some inefficient, much like the employees of any other organiation. And, as in real-life situations, there are frictions and problems as these members interact with each other and with people outside the NPCDP.

A number of factors make it clear that Waitere is to be thrust right in the middle of a hectic schedule. For the enriched task Waitere has just returned from a trip and has a busy week to start with. Since he is responsible for the discharge of duties to his subordinates he has to try to take care of as much paper work as he can to keep everything running smoothly. In the case of the unenriched task Waitere's superior, Mr. Lasler, spends most of his time in community relations outside the organisation. So, Waitere has to have his report ready by Monday, the only day during the week that Mr. Lasler is in his office, in order to get the go ahead for any actions suggested. Waitere has been busy organising a number of functions at the NPCDP downtown centre and could not look through his in-basket to prepare the report. Furthermore, he has a busy schedule for the week to come. In both cases, it is a Saturday, there is no one around with whom Mr. Waitere can consult except for his secretary who has promised to come in to type his letters or reports.

4.8 REASONS FOR THE CHOICE OF A YOUTH ORGANISATION SETTING

The decision to use a fictitious organisation rather than an existing agency as the setting for the situational exercise was based on a number of considerations, the most important of which was the desire to present all subjects with an equally novel situation. The use of the fictional organisation, it was hoped, would minimise the influence of any preconceived notions or biases that the subjects might have toward any specific organisation that exists in New Zealand.

Another advantage of the fictional organisation is that it gives the subjects more freedom to behave forthrightly. Subjects might be unwilling to criticise an actual organisation or its members, but if the agency is fictional, they presumably have fewer qualms about voicing their opinions.

The New Plymouth Community Development Programme was selected as the fictional department because it appeared to encompass an optimum combination of the novel and the familiar. The NPCDP is somewhat similar to the YMCA which already existed and many of the subjects were familiar with its functions and activities. Ironically, at the time the fictional organisation was developed for the research, the Ministry of Internal Affairs was studying a proposal to create a Community Development Programme in New Plymouth somewhat similar to our fictional organisation.

The existence of a similar organisation and other background materials thus provided a bridge from the familiar to the unfamiliar.

The configuration of functional diversity, along with a requirement that limited NPCDP to supplementing and co-ordinating such services as were already provided by a similar organisation, was deliberately manufactured in order to simulate institutional interaction complexities typical of a medium to large organisations, while keeping the cast of characters no greater than that found in small organisations.

4.9 CHOICE OF ROLE POSITION

The Executive Director of the New Plymouth Community Development Programme was chosen as the role position in the enriched task structure simulation because:

1. The executive level represented a reasonably familiar position which the subjects could easily identify with.
2. The Executive Director can be perceived as an important position, thus increasing the significance of the role.
3. The role position could logically encompass a variety of organisational functions and problems.
4. The physical separation of the Chief from the majority of his subordinates made the restriction to written communication less artificial.
5. Such a position would enable the subject to interact with a wide variety of people both inside and outside the organisation. It also provided the subject with substantial autonomy to deal with peers and subordinates.
6. Mastery of a technical area of knowledge was not necessary in order to undertake the position.

In the unenriched task structure the Management-Employee Relations Officer was chosen as the role position in the simulation because:

1. The role position represented an unfamiliar role for most of the subjects and therefore the participants had a difficulty in identifying with this unfamiliar position.
2. The Management-Employee Relations Officer could encompass a menial task lacking any significance.
3. The lord-of-the-manor vs. the peasants-in-the-fields structure is a common one in many bureaucratic organisations where the regular form of communication is through written material, thus making the restriction to written communication less artificial.
4. The Management-Employee Relations Officer position could logically encompass the familiarity with a cross-section of departmental problems and functions only.
5. The link-in-the-chain position restricts any form of autonomy of action to deal with peers and subordinates.
6. Similar to the enriched position, mastery of a technical area of knowledge was not necessary in order to undertake the position.

4.10 THE IN-BASKET ITEMS

One of the main objectives of an in-basket exercise is the presentation of realistic job-related situations that elicit responses typical of on-the-job behaviour; realism, therefore, was a major objective of the simulation development. In the selection and development of materials, no attempt was

made to reflect a particular theoretical framework or a particular kind or level of management job. Instead, the contents of the in-basket consisted of items with general applicability, for situational variety, and for ease of transformation to the two task climate settings.

A total of ten items were used in the two NPCDP in-basket exercises. Most of these items were concentrated on three general topics, law and order, religious discrimination and moral principles.

On the average, two persons are explicitly involved per in-basket item, at least to the extent of being named in the documents presenting the item. One of those involved are subordinates or superiors in the NPCDP organisation and the other is from the outside. The three problem situations recur and keep building throughout the exercise. The items vary widely in significance, complexity, overtness of the problem statement, and in the source and nature of suggestions concerning desirable courses of action.

The NPCDP in-basket items are presented in Appendix C.

4.11 ASSIGNMENT OF SUBJECTS TO TREATMENTS

The objectives of the procedure for assigning subjects to treatments were:

1. A random assignment of the subjects to experimental treatments.
2. An equal number of subjects in each treatment category.
3. Operational simplicity.

The procedural steps used in assigning subjects to treatments were as follows: the name of each subject who

had volunteered for the experiment was printed on one of ten colour cards, each colour representing one treatment category. These cards were sequentially interleafed, that is, white, red, yellow, orange, silver, copper, gold, green, blue, pink, white, red, yellow, orange, silver, copper, gold, green, blue, pink, etc. The collated names were then divided into ten equal stacks, one for each treatment condition and two for the Pilot Study groups. Each stack contained the same coloured cards.

After recruitment, subjects were contacted by telephone and dates and times were arranged for the first session so as to suit the participant.

Although only 100 subjects were required (including twenty for the Pilot Study) the additional 16 subjects represent the inevitable minority of subjects who either decided not to continue with the experiment in the no pay condition, or who arrived very late and could not be accommodated in another session of the same treatment group, or whose results had to be eliminated from the analysis due to biographical factors which may have affected the homogeneity of the sample. Thus, for each of the eight experimental groups, a minimum of ten subjects were randomly allocated. For the above-mentioned reasons, some groups initially had 1-3 more subjects than the required minimum.

Since the subjects of each treatment group could not attend the experimental session at the same time each treatment session consisted of three or more subjects.

4.12 THE DEPENDENT VARIABLES

A number of behavioural and self-report measures were used as dependent variables. Performance quantity was defined as the total number of words written in response to the in-basket items. Performance quality was assessed by means of a rating procedure. Three raters randomly scored the subjects' responses to the ten items on the in-basket. The ratings were based on six categories: planning and organising, written communication, decision-making, administrative ability, mental alertness and sensitivity. These categories were evaluated on a five point rating scale. Details of the scoring procedure will be presented in another section of this chapter. The final quality score for each subject was the average quality rating on all the ten items.

A number of attitude and self-report measures was included in a questionnaire administered at the end of both sessions. In order to check the manipulations of the task characteristics, subjects completed the self-report measures of Identity, Significance, Variety, Autonomy and Feedback from the Job Diagnostic Survey (Hackman & Oldham, 1976) at the end of the task performance session (the first session). To measure task attractiveness or interest, subjects were asked to respond to a series of semantic differential scales set against the concept MY TASK (Scott & Rowland, 1970), which was also administered at the end of the first session. Both the Job Diagnostic Survey and the self report measure for task attractiveness are presented in Appendix E.

A behavioural measure of intrinsic motivation was also used. At the end of the second session, the feedback and pay session, the subject was asked to volunteer for an

additional, nonreward session to be scheduled during the following week. This was asked through a forced-choice question in which the subjects were told that they would perform the same task in the additional session. They were told to put down reasons for their affirmative or negative response. The number of subjects in each experimental condition volunteering for the extra session was used as an index of intrinsic motivation.

The above question was included in the questionnaire booklet which contained self-report measures administered at the end of the second session of the experiment, after the subjects were paid and received the appropriate feedback. The self-report measures in this questionnaire booklet included work attitude scales from the Work and Life Attitudes Survey developed by Warr, Cook and Wall (1979). Involvement, intrinsic motivation, higher order need strength, perceived intrinsic job characteristics and job satisfaction were each measured using Scales 1, 2, 3, 4 and 5 of this instrument. Sample copies of these self-report measures are included in Appendix F of this thesis.

4.13 PRESENTATION OF THE INDEPENDENT VARIABLES

An organisational structure, as we have defined previously, is a set of attitudes or expectations held in common by a majority of the members of an organisation, as to the kind of uniformity of behaviour that is seen as appropriate in that organisation. In simulating organisational structure conditions in this experiment, attempts were made to include in the background information, materials that realistically and clearly showed that Mr. Waitere had

certain liberties with regard to styles of behaviour in the organisation.

As described earlier, the eight experimental treatment conditions involved two dichotomies representing extremes of two organisational structure conditions vs. four variations in pay conditions. The organisational structure condition dichotomy had to do with being enriched vs. being unenriched in task characteristics. The other dichotomy had to do with pay conditions; in one condition subjects were not paid for their participation, the second condition had to do with a noncontingent form of payment. In the other two pay variations subjects were paid on a contingent basis, fixed-ratio vs. variable amount-variable ratio. Half the subjects were randomly assigned to the enriched structure task, while the other half to the unenriched structure condition. Similarly, one-fourth were assigned to each of the four pay conditions. The combination of structures and pay resulted in the eight treatment conditions:

(a) enriched task plus no pay;

(b) unenriched task plus no pay;

(c) enriched task plus fixed-amount pay;

(d) unenriched task plus fixed-amount pay;

(e) enriched task plus fixed-ratio pay;

(f) unenriched task plus fixed-ratio pay;

(g) enriched task plus variable amount-variable ratio pay; and

(h) unenriched task plus variable amount-variable ratio pay.

4.13.1 Structure Presentation in Background Materials

Two different versions of background materials were given to the subjects, one of which was to emphasise the enriched characteristics of the simulated organisation, the other to give the impression of an unenriched structure condition. The two versions of the background materials are presented in Appendices A and B.

Although the basic information given in the background materials for both versions is identical, the role of Mr. Waitere differed to accommodate for the variations in the five core task dimensions of task enrichment. Each version of the background contained the following:

1. an instruction sheet;
2. a biographical background of the NPCDP and the branches;
3. background information about Mr. Waitere and about his role in the organisation;
4. an organisational chart indicating the position of Mr. Waitere in the organisation; and
5. background information about the three employees which Mr. Waitere often interacts with. They are Mr. Stanley, Mr. Snowell and his secretary Mrs. Brown.

In addition to the above-mentioned materials, the unenriched in-basket version contained some additional information about the issues to be discussed in each item of the in-basket. This made the ten in-basket items appear to be unrelated and to be considered as ten separate issues.

Other than the presetnation of the structures in the written background materials, further attempts to magnify these differences were made during the presentation of the task

structure conditions at the time of administration of the in-baskets. The subjects in the enriched version were told that the success of this research depends on how well they do on this exercise and the results of the exercise will indicate their decision-making and problem-solving abilities. The unenriched treatment groups were told that it is not important for them to take the task seriously because their results had no effect on the outcome of the experiment nor would it reflect any of their personal abilities.

4.13.2 Presentation of Pay

The only form of incentives the subjects received in this study was in the form of monetary rewards. No other form of incentives, such as educational credit, were used (even in the no pay condition). The reason for the choice of monetary incentives was because it seemed more feasible for our purpose and much easier to manipulate than educational credit or any other form of incentive. Much of the motivational research which employs educational credit to recruit subjects is confounded by the fact that the real reason for the inferences is not the monetary incentive which is introduced in their design, but the subjects' desire to please the experimenter, or to avoid giving an undesirable impression and to meet partial course requirements.

This study was free from such confounding for two reasons, firstly because educational credit was not used as an incentive and secondly because the experimenter was in no way associated with scholastic assessment of the students who served as subjects.

The financial incentives were provided to the subjects during the second session. There were four levels of pay creating the 2 x 4 design. The pay conditions were explained to all participants during the first session. Subjects in different pay conditions received different instructions which was explained as follows:

1. No Pay

"Although I had promised that you will be paid for participating in this research, I'm afraid I am not able to keep my promise. The research grant which had been offered to me has been withdrawn due to economic cut-backs by the university and I have been asked to proceed with this research without any fundings. Therefore, if you wish to participate in this study, it has to be on a voluntary basis because I will not be able to provide you with any form of compensation. Any one who does not wish to continue with this research may leave before I start reading out the instructions."

2. Non-Contingent Pay: Fixed Amount - $3.00 per hour for participating in task performance session

For both the enriched and unenriched task groups: "In order to compensate you for your time and effort, the Department of Psychology has given me money to pay you $3.00 per hour for the two-hour task. This amount will be paid out at tomorrow's session."

3. Contingent Pay: Fixed Ratio - 4c per point given by the rater

For both the enriched and unenriched task groups: "In order to compensate you for your time and effort the Department of Psychology has given me money to pay you.

However, the sum is very limited and I have to spread the available funds to as many participants as possible. So, I will not be able to pay you on an hourly basis, rather you will be paid 4c for each point you score on the exercise. This amount will be paid out at tomorrow's session after the exercises have been scored."

4. Contingent Pay: Variable Amount-Variable Ratio (VA-VR) - Pay dependent upon performance on in-basket, but actual payoff varied.

"In order to compensate you for your time and efforts, the Department of Psychology has given me money to pay subjects who participate in this study. However, the sum is very limited and I have to spread the available funds to as many participants as possible. So, I will not be able to pay you on an hourly basis, rather you will be paid in the form of tokens which you can exchange for money at the next session. In the back of each item you attempt on the in-basket there is a coloured card which has the item number printed on it. In all, there are ten different coloured cards which have been pinned, at random, to each item of the in-basket. They do not follow a special order or sequence and there is always the possibility that you may have two or more cards of the same colour among the ten cards. The colours are white, red, yellow, orange, silver, copper, gold, green, blue, and pink (the experimenter shows the subjects what the cards look like as he reads out the colours). Bring these with you when you come tomorrow and you will be able to exchange them for money. Each of these cards are worth between 1c to 10c although some may be worth nothing. The exact value of each card will be

randomly allocated for each item and will be announced tomorrow. The allocated values will be multiplied by the number of points you scored on the related item in the in-basket and you will be paid accordingly."

4.14 SCORING THE IN-BASKET RESPONSES

At the end of the first session of the study, each participant left behind all the written responses to the items in the in-basket; all the letters and/or memoranda he or she had written, the reminders to himself or herself, or the report he or she had prepared (in the case of the unenriched task). The material constituted the record of the subject's performance in response to a standard set of administrative problems as influenced by whatever organisational structure conditions he or she had perceived to exist and the type of pay scheme they worked under.

Two graduate students and the researcher served as raters. The task of the raters was to reduce all material on an in-basket to a set of scores that represent the performance of each participant on each item.

In the development of scoring procedures, a distinction was made between *stylistic* scores and *content* scores. Stylistic scores were defined as *how* something was done, that is, the style of the actual written responses of a participant. Content scores, on the other hand, were defined as *what* was done, that is, the courses of actions taken by a respondent. Stylistic scores were only used in the scoring procedures because the in-basket was not used in this study to train or investigate participants' management skills or abilities. Moreover, stylistic scores seem

to include all the factors necessary for measuring quality of performance.

The scoring categories used in this study are basically the same as those developed by I.B.M. (see Dakin, 1983, for details) involving the in-basket. Deletions from the list were made, however, in an effort to profit from an earlier experience by the author. Some categories that were very rarely used or were unsuitable for this particular situation, were dropped. Six factors appeared to be relevant to the behaviours involved in this situational exercise and were considered in scoring the in-basket protocols. These assessment factors are:

1. Planning and Organising
2. Written Communications
3. Decision-making
4. Administrative Ability
5. Mental Alertness
6. Sensitivity.

The ratings of each assessment category was scored from 1 (very poor) to 5 (very good). The scoring form consisted of a sheet of paper, each containing eighty-eight empty cells formed by lines defining rows and columns. The column heads are the assessment factors, and the rows are numbered to correspond to in-basket items. The rater reads the response to an in-basket item and then records a figure from 1 to 5 (based on the ratings scale) in the appropriate cell to indicate the quality of the assessment categories represented by the column heading. In the case of columns 1, 2, 3, 4, 5 and 6, the entry may be a digit ranging from 1 to 5. Overall Evaluation is the total of the six factors

rated and may range from 1 to 30. Entries in column 8 represent the number of words written by the subject for each item, this figure supplies information regarding quantity of performance.

Guidelines were designed for the raters to provide them some benchmarks for the assessment of the six categories. The raters were asked to judge the participant's general approach to each item rather than to assess the specific responses. A sample page from the scoring form and the guidelines prepared for the raters are included in Appendix D.

4.15 THE PILOT STUDY

Two weeks before the actual study a Pilot Study was organised using subjects from the recruited subject pool. This session was conducted for five reasons. The principle purpose was to test the effectiveness of the variation in task dimensions of variety, identity, significance, autonomy and feedback. The second purpose for the pilot session was to evaluate the level of interest or attractiveness of the task as perceived by the subjects. The third reason was to detect any flaws that may exist in the experimental procedure. The fourth reason was to give the experimenter a chance to gain some experience in conducting the experimental sessions and to provide the three raters with the necessary experience in scoring the in-basket items. The fifth reason was to develop a constant goal for the in-basket and to measure the average correlation among raters for their overall ratings.

Also, in order to develop a constant goal for the scores, which could be explained to the participants in the actual experiment, the Pilot Study was used to set a common

goal for both versions of the in-basket exercise. The ratings of the in-basket items in the Pilot session was also used to check the consistency of the ratings among the raters. It should be noted that the incentive schemes used in the actual experiment were not employed in the pilot study, because it was felt that the manipulation of pay was a defined factor which required no prior testing. Furthermore, the funds made available to the experimenter did not allow for such testing. Therefore, with regard to the pay variable, subjects in the Pilot Study were treated as a no pay treatment group.

4.15.1 The Pilot Subjects and the Experimental Procedure

Twenty subjects from the subject pool were selected according to the assignment of subjects to treatments. A group of ten subjects were assigned to each task structure condition. The two raters who were to rate the in-baskets (together with the experimenter) were requested to participate in both treatments to experience both tasks, thus making a total of 12 subjects in each group. However, the results of these two raters were excluded from the overall analysis for the Pilot Study.

Each treatment session of the experiment was conducted on separate days. The experimental procedure is apparent in the instructions to the subjects.

For both groups, when all the subjects were seated the experimenter introduced himself as a member of the department who was working on a Masters thesis project. The subjects were then given a brief description of the research, as follows:

"I am doing a research concerning people's attitudes towards different task designs. There are two parts in this study. The first part, which you are about to do today takes about two hours to complete. The task involves mostly writing answers to problems which you will be confronted with on the task. At the end of the task you will have to respond to a questionnaire about the task. The next part, which is to be arranged at a time when all of you can attend together, is a very brief session where you will be told how well you have done on the task followed by another brief questionnaire. I am unable to tell you too much more about the task you will be engaged in as this knowledge could adversely affect the results. However, at the end of the next session, I will then be free to explain the exact nature of the study, and answer any of your questions."

Next, participants were told of the no pay situation:

"Although I had promised that you will be paid for participating in this research, I'm afraid I am not able to keep my promise. The research grant which had been offered to me has been withdrawn due to economic cut-backs by the university and I have been asked to proceed with this research without any funding. Therefore, if you wish to participate in this study, it has to be on a voluntary basis because I will not be able to provide you with any form of compensation. Anyone who does not wish to continue with this research may leave before I start reading out the instructions."

After a short pause, the experimenter proceeded with reading the instructions for the in-basket. These instructions

were read to all subjects in the enriched group:

"What I want you to do is very simple, but I want you to take it seriously. *This whole exercise depends on you!* The exercise you are about to do is called a 'job sample' exercise in which the content is similar to the work done on a job in real life. In this particular job sample you will be given an 'in-basket' of items (as opposed to an 'out-basket') from an executive's desk. Over the past few days, a number of items have accumulated in the in-basket; these include memos, letters and telephone messages. You, the executive, must act upon each of these items by delegating, calling for information, referring to others, meeting with superiors, subordinates and peers, planning, dealing with the item yourself, etc."

On the table in front of each subject were two packages marked with 'A' and 'B', two pens, two pencils, paper clips, scribble pads and writing paper. Referring to the two packages, the experimenter then said:

"Will you please take the 'Instructions' sheet from Envelope A. This should be the top sheet in the package."

After everyone had taken out the instructions the experimenter continued as follows:

"Please read the 'Instructions' as I read them out".

Then the experimenter proceeded with reading the instructions. At the end of the instructions the experimenter explained the scoring procedures to the subjects as follows:

"Each item you attempt will be rated on six assessment categories. I shall list these categories on the blackboard as I describe each one briefly. Each of these factors will be evaluated on a scale of 1 to 5 representing the two

extremes of very poor and very good. I will explain each assessment category very briefly:

PLANNING AND ORGANISING is related to the way you handle each item, that is, whether you establish any priorities for accomplishing the actions you are about to take and whether you have given any reasons for them.

WRITTEN COMMUNICATIONS indicates how well you have expressed your thoughts and whether you have expressed them clearly and succinctly or were you ambiguous and wordy.

DECISION-MAKING is related to the type of decisions you made. You will not be assessed for the right or wrong decisions, but the number of decisions you make.

ADMINISTRATIVE ABILITY is related to your ability to delegate responsibilities to your staff and making the correct delegation to the right persons.

MENTAL ALERTNESS indicates whether you were able to conceptualise broadly the organisation, and your position. In other words, how effective you were in the role-playing.

SENSITIVITY which means whether you acted with sensitivity for the different circumstances or not, and the way you have inter-related some of the cases."

As soon as the instructions were read the experimenter reminded the subjects of the time limit stating:

"You have exactly two hours to work on the exercise, please allocate your time accordingly. After 15 minutes I will return to this room to explain any points you may have found ambiguous in the Instruction sheet and the background information. Please do not talk to each other until the whole experiment has finished. You may start now (and simultaneously the experimenter pointed to the clock which was on the wall in full view of the subjects)."

After fifteen minutes the experimenter returned to the room to reply to any questions related to the instructions and background information and to check if the time set for reading the instructions and the background information was sufficient. This was confirmed because all subjects had already started working on the second envelope. Since there were no questions asked by the subjects regarding the contents of Envelope 'A' it was concluded that the contents of the in-basket exercise did not require any modifications.

At the end of the two-hour period subjects were told to make sure that all materials were attached to the correct items and to put all the in-basket items with the related material back into Envelope 'B'. Subjects were then handed a booklet containing the Job Diagnostic Survey and the task interest scale, and were asked to respond to *all* questions in the questionnaire.

After the questionnaires were collected, the experimenter checked each one carefully to make sure that subjects had responded to all the questions. The experimenter then said:

"As I mentioned in the beginning of this session, I need to see all of you briefly tomorrow to determine your reactions to the experiment and to provide you with some feedback. Also we can have a discussion about the experiment and I could reply to any questions you may have . It is best that you arrange a time when all of you could get together, any time would suit me."

Finally, as the subjects handed in their completed in-basket exercise, the concluding set of instructions were read to all subjects:

"Because this is a Pilot experiment, basic elements in it will be involved in a larger study later, for which many more subjects will participate. If you would treat what was involved in this experiment as confidential and not talk of it to other people at all, you will make it more possible for the ultimate findings to be valid. It is vital that later subjects be able to approach this experiment with an 'open mind', without prior 'hints' of what is involved. I would like you to agree not to discuss anything for a period of four weeks until the experiment is over."

At this point the experimenter paused for affirmation of his request, which was readily given. Subjects were then asked for the agreed time set for the next appointment and were told to meet at the same place.

On the next day all members of the enriched task treatment group met at the scheduled time and after being greeted by the experimenter, the scored in-baskets were returned to each subject with a copy of the scoring form pinned to the related items. Each in-basket was simultaneously scored by all three raters to check the consistency of the ratings among raters.

After replying to any questions about the individual results, a booklet containing Warr, Cook and Wall's "Work and Life Attitudes Survey" and the behavioural measure of intrinsic motivation was handed out to the subjects. The experimenter also said:

"Before we discuss the experiment, would you mind rating this attitude survey, they are quite similar to the ones you did yesterday. Please read the instructions very carefully and respond to *all* the questions."

When the questionnaire booklet was finished the experimenter checked that subjects had responded to all the questions. The experimenter then held a debriefing session describing in detail the aim of the experiment and answering all questions the subjects asked. The experimenter then concluded the session as follows:

"As I mentioned yesterday, please do not discuss any aspect of what you were required to do in this study with any one, at least for the next four weeks, until this research is completed. I am very grateful for the help you have been. Thank you very much for taking part."

The procedure for the unenriched group was identical with the exception of the instructions given by the experimenter and the role position in the in-basket.

Similar to the enriched group, the nature of the experiment was described to the subjects. Then the instructions for the in-basket were explained as follows:

"What you are about to do is a very routine task. You don't have to take it seriously because your results will have no effects upon the outcome of the study. The exercise you will be doing is called a 'job sample' exercise in which the content is similar to the work done on a job in real life. In this particular job sample you will be given an 'in-basket' of items (as opposed to an 'out-basket') from an employee's desk. The employee is a senior officer in a youth organisation and over the past few days, a number of items have been accumulated in the in-basket; these include memos, letters and telephone messages. Because of your position in the organisation, you do not have the authority to make any decisions about these items directly unless they have been discussed and approved by your superior.

So your job on this exercise is to write brief reports for each item, reporting to your superior about the actions you wish to take and any other suggestions you may have. In these reports you may suggest ways of delegating, calling for information, referring to others the item, or any actions you think may be appropriate. You have been provided with a guideline which tells you what you should look for in each item when you report to your superior, please stick to these suggestions."

The rest of the instructions for the first session were identical (word for word) to the enriched task climate group.

The second session was conducted identical to that for the enriched group except that the results of the in-baskets were not disclosed to the subjects. Instead it was indicated that because of lack of time it was not possible to score the exercise. However, they would talk about how the subjects did in general and how the in-basket is used in assessment centres. Similar to the enriched group, the subjects were then asked to respond to the "Work and Life Attitudes Survey" and the behavioural measure for intrinsic motivation. After the questionnaire was finished and checked by the experimenter, subjects were debriefed and all questions were answered. Similarly, they were cautioned not to disclose any aspect of the experiment to anyone and were acknowledged for their participation.

4.15.2 Results of the Pilot Study

In order to check the experimental task manipulation, the scoring key for the Job Diagnostic Survey was used to

measure the ratings for identity, variety, significance, autonomy, feedback and the motivating potential score (MPS) for each subject. An overall task stimulation was created by summating the scores for each dimension. The means, standard deviations and t-values for the ratings of the enriched and unenriched task climate conditions is presented in Table 9. Supporting the task manipulation, there was a significant difference between the perceived task stimulation for those who participated on the enriched and unenriched task climate conditions regarding variety (5.88 vs. 3.81; $t = 6.83$, $p<.001$), identity (4.69 vs. 2.93; $t = 5.45$, $p<.001$), significance (6.26 vs. 3.19; $t = 11.99$, $p<.001$), autonomy (6.29 vs. 2.94; $t = 14.63$, $p<.001$), feedback (5.75 vs. 2.53; $t = 13.94$, $p<.001$), MPS (208.10 vs. 26.41; $t - 13.81$, $p<.001$).

TABLE 9

MEANS, STANDARD DEVIATIONS AND T-TEST ANALYSIS BETWEEN GROUPS FOR THE JOB DIAGNOSTIC SURVEY RATINGS OF PILOT STUDY SUBJECTS

Task Characteristics	Enriched* Task		Unenriched* Task		t-value**
	M	SD	M	SD	
Variety	5.88	1.01	3.81	1.19	6.83
Identity	4.69	1.16	2.93	1.12	5.45
Significance	6.22	0.60	3.38	1.18	8.61
Autonomy	6.29	0.59	2.94	1.03	14.63
Feedback	5.75	0.98	2.53	0.67	13.94
MPS	208.10	65.26	26.41	16.00	13.81

* N = 10

** All t-values significant at .001 level ($p<.001$)

To investigate task interest, the positions for each scale on the semantic differential scale of MY TASK were assigned a number from one through seven, with one assigned to the right side of the scale which appeared to indicate the least preferred condition. The subject's ratings to each bipolar scale in both the enriched group and the unenriched group were summated for each scale to produce a measure for task interest. Table 10 shows the means and standard deviations for all the scales and indicates whether the subjects found the task to be reasonably interesting.

TABLE 10

MEANS AND STANDARD DEVIATIONS FOR TASK ATTRACTIVENESS OR INTEREST RATINGS OF PILOT STUDY SUBJECTS ON THE SEMANTIC DIFFERENTIAL SCALE MY TASK

Scales		M	SD
Good	- Bad	5.15	1.53
Interesting	- Boring	6.15	0.75
Complex	- Simple	6.25	0.72
Pleasant	- Unpleasant	5.30	0.92
Difficult	- Easy	5.95	0.83
Structured	- Unstructured	4.60	1.09
Attractive	- Repulsive	5.20	1.54
Explicit	- Vague	4.70	0.73
Clear	- Hazy	6.50	0.51
Meaningful	- Meaningless	5.50	1.15
Varied	- Routine	5.15	0.67
Tangible	- Intangible	4.95	0.99
Positive	- Negative	5.50	0.51
Broad	- Narrow	3.90	0.91
Exciting	- Dull	5.85	0.93

NOTE: Direction of polarity 7-1, with 7 indicating high attractiveness or interest.

Although the two versions of the in-baskets differed in terms of their task characteristics, they were written so they could be scored using the same six dimensions. The data of the ratings from the pilot study were pooled; reliabilities and intercorrelations were computed for 20 cases that resulted from combining the two groups.

The ratings of performance quality were found to be highly reliable. The independent quality ratings of the 3 raters correlated .86 for the 20 subjects.

The overall means and standard deviations of all the scores for the Pilot Study groups are shown in Table 11. The intercorrelations among the six categories are also presented in Table 11. The data are presented to reflect the internal consistency for the quality of performance rating dimensions.

TABLE 11

MEANS, STANDARD DEVIATIONS AND INTER-CORRELATIONS OF RATING DIMENSIONS*

Rating Dimensions			Intercorrelations					
	M	SD	1	2	3	4	5	6
1. Planning and Organising	2.35	0.52						
2. Written Communications	2.68	0.14	0.78					
3. Decision-making	2.55	0.64	0.66	0.76				
4. Administrative Ability	2.66	0.37	0.64	0.79	0.50			
5. Mental Alertness	2.79	0.35	0.76	0.69	0.53	0.76		
6. Sensitivity	2.55	0.22	0.73	0.69	0.60	0.70	0.83	-

* N = 20

The overall means of the Pilot groups' scores in Table 11 indicates that a score of 18 out of 30 for each item (that is an average score of 3 for each dimension) or 180 out of a total of 300 possible points for the whole exercise is a hard but realistic goal to set up for both versions of the in-baskets. This score was used as a common goal and was explained to all participants in the actual experiment.

The reliabilities of most of the scores from the combined in-baskets seem high enough to justify the use of these dimensions.

The procedure described in the Pilot Study was seen as satisfactory and was adopted for the actual experiment. However, some modifications in the instructions given by the experimenter were deemed necessary to avoid any possible misunderstandings. These necessary modifications were brought to the attention of the experimenter by the two raters who participated in both studies. The modifications will be made clear when describing the procedure of the actual experiment in the following sections.

4.16 THE PRINCIPAL EXPERIMENT

4.16.1 Procedure

The actual experiment was conducted during the last three weeks of the first term, and the procedure was as follows. Subjects were assigned to the conditions. They spent the first 15 minutes reading the instructions and the background information explaining the nature of their task. The experimenter answered any questions regarding the instructions and explained the scoring procedure, the goal

plus the type of feedback and pay for the appropriate conditions. The subjects worked for one hour and forty-five minutes on the in-basket items and then completed the Job Diagnostic Survey to measure manipulations of the task characteristics, and then provided some biographical information about themselves through a biographical questionnaire (see Appendix D). At the second meeting, held a day later, subjects received the appropriate feedback and their pay (with the exception of the no pay condition), then completed the Work and Life Attitudes Survey.

4.16.2 Presentation of the Setting

Some care was taken to standardise the procedure as much as possible and this required attention to the organisation of the experimental setting. A secondary reason for a reasonably high degree of organisation, was the large number of subjects who were scheduled within certain restricted intervals of time. There had been an unavoidable tendency for subjects to cluster on particular days so that two or three sessions were held in one day.

Subjects were contacted by telephone the day before they were scheduled for the first session to ensure their attendance.

4.16.3 Materials

All subjects were provided with the following materials:

(a) A copy of the In-Basket Instruction Sheet and the Background Information contained in a brown manilla envelope marked 'A'.

(b) One set of ten In-basket Items in a second envelope marked 'B'.

(c) Paper clips.

(d) Approximately thirty sheets of ruled paper and one scratch pad per participant.

(e) Two pens, one blue and the other red, and two pencils for each participant.

4.16.4 Physical Setting

The experiment sessions took place at the Department of Psychology of the University of Canterbury. Two rooms were used for the experiment depending on the size of the group during each session. If the number of participants in a session was less than or equal to eight, the Clinical Laboratory was used as the "experimental" room which was organised to seat up to eight subjects. If the participants were more than eight, the Activity Room in the Social Psychology Laboratory, a larger room was organised to provide seating for up to twelve subjects. Although the rooms could accommodate more than the suggested numbers individuals were placed far enough apart to avoid talking or distraction.

The experimental setting proper consisted of a room with a layout of desks in two rows. To one side of the room was a blackboard with the scoring categories and the ratings scale clearly written in white chalk. This was used by the experimenter when explaining the scoring procedure and the goal to the subjects.

Before the subjects arrived for the first session all tables were set with the materials described above.

At the top of each desk was a box which contained the paper clips and a pencil-holder with the pens and pencils. On the left side of the desk were the two brown manilla envelopes clearly labelled 'Envelope A' and 'Envelope B', while the papers and scratch pad was placed in the centre.

4.16.5 Instructions

When each subject arrived on the scheduled time, he or she was greeted by the experimenter and was asked to wait until all participants scheduled for the session arrived. Occasionally subjects arrived early and sometimes had to wait for about ten minutes after scheduled time for the other participants to arrive. If any subject arrived after ten minutes he or she was either reassigned to another same treatment session (if possible) or excluded from the experiment.

The experimenter then escorted the subjects to the "experimental" room where he asked the participants to be seated and then introduced himself. The main purpose for this delayed introduction was to avoid the tendency of subjects to ask questions about the experiment or "chat-up" the experimenter for some hints. It should be noted that the subjects were all strangers to the experimenter and had had no prior contact with him. Even the "reminder" telephone calls to the subjects were made by one of the raters.

A. ENRICHED TASK/NO PAY AND UNENRICHED TASK/NO PAY GROUPS

This refers to groups A and B, as indicated in Figure 2. After the experimenter introduced himself, he began as follows:

"Firstly, thank you for coming. This study being conducted is part of a thesis, which requires me to see quite a few people. You may wonder what this experiment is all about and where it is leading. The only thing I can say is that this research is concerned with people's attitudes towards different tasks. I want to assure you that I will explain in full, the nature of the experiment and answer any questions at the completion of the sessions. If I explained anything now, it would adversely affect the results of the study.

There are two parts in this study. The first part which you are about to do today, takes about two hours to complete. The task you will be doing involves mostly writing answers to problems which you will be confronted with. Once I have finished reading the instructions, it will become clear to you what you have to do. At the end of the session you will be responding to a questionnaire about the task and will provide me with some personal details about yourselves. I need to see you briefly once more to determine your reaction to the experiment. It is best that we meet as close as possible to this session while you still remember the details of the task. I would prefer the next session to be organised for tomorrow. Please arrange a convenient time when all of you can attend together. At tomorrow's session, you will be told how well you have done on the task and I will be free to explain the exact nature of the study, and reply to any questions you may have."

When addressing the Unenriched Task/No pay subjects (group B), the experimenter added to the above statement the following:

"Because of the lack of time it will not be possible to provide you with any individual feedback. Instead we would talk about how your group did in general and the general usage of the task."

For both the Enriched Task/No Pay and Unenriched Task/No pay groups, the experimenter continued:

"Although I had promised that you will be paid for taking part in this research, I am afraid I shall not be able to provide you with any form of compensation. The research grant which had been offered to me has been withdrawn and I have to proceed with this research without any fundings. You do not have to do the task, however, if you wish to participate it has to be on a purely voluntary basis because no form of pay will be provided. Those who wish to leave may do so before I start reading the rest of the instructions."

At this point the experimenter paused for a while to allow those subjects who did not wish to continue with the experiment to leave the room.[1] Then he continued with the instructions for the in-basket exercise and explaining the scoring procedures which was identical (word for word) to the Pilot Study instructions (see p.102). The experimenter then explained the goal to both groups as follows:

"Previous research has indicated that it is unrealistic to expect subjects to score the maximum possible points on such exercises. So, I have decided to set a common goal which you can all work towards. The results of our pretests indicated that a score of 18 out of 30 possible

---

[1] Two subjects from the Enriched task group and one from the Unenriched task group decided not to continue with the experiment at this stage and left the room.

points on each item is a more reasonable and realistic score, although a hard goal."

After the subjects finished with the Job Diagnostic Survey and the biographical questionnaire, both groups were addressed as follows:

"I will give you some time to decide among yourselves the time you wish to attend the next session. After you have reached a consensus please announce the agreed time."

During this period the experimenter checked all the questionnaires to make sure that all the questions had been answered. Any incomplete questionnaire was returned to the participant to be completed before he or she left the room.

The concluding remarks were addressed to all subjects in both groups:

"Please make sure that you have put your names on the envelopes containing the in-basket items (that is, Envelope B) before you leave. It is important to the results of this experiment that you do not discuss any aspect of what you were required to do with anyone, until the study is completed. I will be using other students from the university as subjects and it is vital that they approach this study with an 'open mind'. I would like you to agree not to discuss anything for a period of three weeks until the experiment is over."

As for the Pilot Study groups, the subjects were reminded of their session scheduled for the next day and were told to congregate in the same place.

The second session was identical to the Pilot Study in every aspect.

B. ENRICHED TASK/NON-CONTINGENT PAY AND ENRICHED TASK/NON-CONTINGENT PAY GROUPS (Fixed-Amount of pay at $3.00 per hour).

This refers to groups C and D, as indicated on Figure 2 (see page 73).

The introductory procedure for subjects of these two groups was identical (word for word) to that experienced by groups A and B (refer to page 114).

However, the procedure dealing with the explanation of the incentive scheme was different in accordance with that described previously in Section 4.15.2 of this chapter (refer to page 107). After describing the details of the first session and informing them of the second part of the experiment, the experimenter said:

"At tomorrow's session you will be told how well you have done on the task and you will be paid for the time you spent working on the task. I will also explain the exact nature of the study, and reply to any questions you may have at the end of tomorrow's session. In order to compensate you for your time and effort, the Department of Psychology has given me money to pay you $3.00 per hour for the two-hour task. This amount will be paid out at tomorrow's session."

When addressing the Unenriched Task/Non-contingent Pay subjects, the experimenter said:

"Because of the lack of time it will not be possible to provide you with individual feedback. Instead, we will talk about how your group did in general and the general usage of the task. I will also explain the exact nature of the study, and reply to any questions you may have at the

end of tomorrow's session. In order to compensate you for your time and effort, the Department of Psychology has given me money to pay you $3.00 per hour for the two-hour task. This amount will be paid out at tomorrow's session."

C. ENRICHED TASK/CONTINGENT PAY AND UNENRICHED TASK/CONTINGENT PAY GROUPS (Fixed-Ratio Pay at 4c per point scored on the exercise)

This refers to groups E and F, as indicated in Figure 2 (see page 73).

Similar to the previous groups explained above, the introductory procedure was indentical to that described for groups A and B. Similarly, the incentive scheme was different in accordance to Section 4.15.2 of this chapter. After describing the details of the first session and informing the subjects about the second session to be held the following day, the details about the second session were explained which was identical to groups C and D (refer to page 118). However, when describing the pay procedures, both groups received the following instructions:

"In order to compensate you for your time and effort, the Department of Psychology has given me some money to pay you. However, the sum is very limited and I have to spread the available funds to as many participants as possible. So, I will not be able to pay you on an hourly basis, rather you will be paid 4 cents for each point you scored on the exercise. This amount will be paid out at tomorrow's session after the exercises have been scored."

The rest of the procedure for this session and the second session is identical to that for groups A and B (see page 114).

D. ENRICHED TASK/CONTINGENT PAY AND UNENRICHED TASK/CONTINGENT PAY GROUPS (Variable Amount-Variable Ratio Pay)

This refers to groups G and H, as indicated in Figure 2 (see page 73).

As for the subjects of the other six groups, the introductory procedure was identical for this group, with the difference in the procedure explaining the incentive scheme. Identically, the first session and the second session were described to the groups and the instructions given to the subjects about the pay was read out as detailed in section 4.15.2 (see page 107).

As for the other groups, the procedure followed in the second session was identical to that experienced by the Pilot Study groups. To administer pay on a variable amount-variable ratio scheme, the following design was adopted:

1. The coloured cards were pinned to each item of each in-basket in a random order. The order to which these cards were attached to the items for each in-basket is presented in Table 12.
2. To account for the variable-ratio pay, some cards were randomly selected and nominated as "no incentive" cards. To vary the amount of pay, the "incentive" cards were assigned values from 1 to 10 cents per point scored on each item. The random order of pay which was followed is also presented in Table 12.

For all pay groups (i.e. Groups C, D, E, F, G and H), when the second session was completed, subjects were then paid and thanked for their co-operation. The experimental procedure and underlying theory were explained in as much

TABLE 12

RANDOM ORDER OF COLOURED TOKEN CARDS* ATTACHED TO THE ITEMS OF THE IN-BASKET AND THE RANDOM PRESENTATION OF PAY (IN PARENTHESES) FOR SUBJECTS** IN VA-VR PAY SCHEME***

IN-BASKET ITEMS	ENRICHED GROUP SUBJECTS										UNENRICHED GROUP SUBJECTS									
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
1	Yellow (4)	Pink (10)	Red (1)	Gold (0)	Yellow (2)	White (5)	Gold (2)	Silver (4)	Pink (6)	Pink (8)	Blue (9)	Gold (9)	Copper (7)	Orange (3)	Blue (0)	Gold (0)	Pink (8)	Gold (9)	Green (6)	Silver (7)
2	Blue (0)	Silver (3)	Blue (9)	Orange (2)	Pink (8)	Yellow (2)	White (9)	Blue (2)	Silver (0)	Silver (9)	Yellow (8)	Blue (0)	Blue (5)	Orange (1)	Yellow (8)	Silver (2)	Pink (1)	Red (2)	Gold (10)	Green (7)
3	Copper (3)	Blue (6)	White (4)	Green (10)	Pink (9)	Silver (10)	Orange (8)	Green (10)	Blue (5)	Gold (8)	Orange (1)	Pink (8)	Green (4)	Green (5)	Orange (9)	Blue (6)	Gold (8)	Green (9)	Orange (10)	Pink (6)
4	White (8)	Red (7)	Copper (3)	Silver (6)	Copper (8)	Green (3)	Pink (10)	Copper (1)	Pink (4)	White (6)	Silver (9)	Green (0)	Copper (8)	White (5)	Copper (5)	Green (9)	Yellow (5)	Pink (7)	Blue (3)	Red (8)
5	Copper (3)	Gold (6)	Pink (7)	Yellow (0)	Yellow (7)	White (7)	Gold (1)	Silver (4)	Copper (1)	Copper (1)	Silver (7)	White (3)	Pink (9)	Silver (6)	Green (7)	Orange (3)	White (5)	Green (1)	White (8)	Blue (9)
6	Green (0)	Green (8)	Green (0)	Green (9)	Green (5)	Silver (7)	White (7)	Silver (5)	Yellow (4)	Green (1)	Orange (0)	Red (9)	Copper (3)	Yellow (5)	Blue (4)	Pink (9)	Red (7)	Blue (10)	Pink (4)	Blue (2)
7	Pink (3)	Orange (2)	White (0)	Copper (8)	White (9)	Pink (5)	Blue (5)	Red (7)	Gold (7)	Silver (7)	Pink (4)	Green (0)	Yellow (5)	Silver (6)	Orange (8)	Green (8)	Green (10)	Silver (7)	Gold (7)	Copper (8)
8	Gold (3)	White (9)	White (0)	Orange (3)	Green (2)	Green (10)	Red (7)	Copper (10)	Orange (10)	Green (10)	Silver (5)	Pink (5)	Copper (5)	Green (4)	Green (5)	Silver (1)	Red (1)	Yellow (1)	Blue (8)	Orange (1)
9	Yellow (6)	Silver (2)	White (1)	Silver (2)	White (7)	Pink (4)	White (3)	Green (10)	White (10)	White (1)	Yellow (2)	Yellow (5)	Blue (3)	Gold (10)	Silver (5)	Yellow (6)	Red (10)	Silver (3)	Copper (10)	Pink (7)
10	White (10)	Orange (7)	Silver (0)	Pink (9)	Green (7)	White (8)	Orange (4)	Silver (1)	White (7)	Green (9)	White (4)	Orange (9)	Copper (8)	Gold (3)	Silver (2)	Orange (6)	Gold (1)	Pink (1)	Green (7)	Yellow (6)

* There were 10 cards of the following colours: White, Red, Yellow, Orange, Silver, Copper, Gold, Green, Blue, and Pink.

** N = 20, ten subjects per group.

*** Pay ranged from 0 - 10 cents per point scored on each item with 0 indicating "no incentive".

detail as the subject requested, and he or she was asked not to discuss the study with any other student for a period of three weeks until the experiment was completed.

CHAPTER 5

RESULTS

The factorial combination of the Task Structure and the Financial Rewards constituted a 2 x 4 factorial design. However, in order to examine the separate effects of these two factors on the dependent measures, the subjects were also dichotomised on the basis of Task Content conditions and Pay Contingency conditions. Thus three one-way multivariate designs for Task Structure, Pay Contingency and a combination of the two factors with the eleven dependent measures were used to analyse some of the data.

Four procedures were followed to analyse the data and are presented in the following order:

(1) Checks on the experimental manipulations to determine the success of the intended manipulations and therefore the validity of the entire experiment. Included in this category are:
   (a) the success of the manipulation of the task dimensions in the Task Structure,
   (b) the effectiveness of the manipulations of financial rewards (Pay Contingency),
   (c) the assessment of perceived attractiveness or interest in the task.

(2) Multiple discriminant analyses to assess which factors best account for the variables.

(3) A 2 x 4 multivariate analysis of variance for Task Structure x Pay Contingency to examine the predictions of the hypotheses presented in Chapter 3 of this thesis. Also included in this section is a chi-square test to analyse the behavioural measure of intrinsic motivation employed in this study.

(4) Hierarchical regression analyses to determine the effects of the moderator variables on the self-report measures.

The format of the result presentation will include a table where necessary, written presentation of the results, as well as a brief discourse of the statistical analyses where necessary. The results will not be examined in relation to the hypothesis. This will be covered in the next chapter which will also examine the results in a wider context of the whole field of related research and its significance to the latter.

5.1 CHECKS ON THE EXPERIMENTAL MANIPULATIONS

5.1.1 Task Manipulation

While pilot testing with different groups suggested that the tasks should be perceived as significantly different in terms of task variety, identity, significance, autonomy and feedback (see Chapter 3, p.107), a manipulation check of the experimental groups' perceptions also indicated that the tasks were perceived as different. Table 13 gives the mean scores for each of the five measures of task dimensions and the motivating potential score in the eight groups. A measure of overall task enrichment was created by summing the ratings for the five task dimensions from the Job

TABLE 13

GROUP MEANS AND STANDARD DEVIATIONS FOR TASK CHARACTERISTICS AND MPS SCORES ON THE JDS

Groups: Task x Pay	Variety		Identity		Signi-ficance		Autonomy		Feedback		MPS	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
1. Enriched/No Pay	5.97	.97	4.61	.85	6.20	.39	6.30	.37	5.63	.24	201.67	56.72
2. Unenriched/No Pay	4.10	.95	2.93	.70	3.39	.67	2.76	.56	2.64	.51	26.83	12.71
3. Enriched/Noncontingent Pay	5.93	.93	4.86	1.26	6.53	.55	6.30	.69	6.07	.63	225.11	61.31
4. Unenriched/Noncontingent Pay	3.93	1.43	2.83	.93	3.10	1.59	2.87	1.09	2.47	.85	25.04	19.73
5. Enriched/Contingent Pay	5.97	1.24	4.37	1.71	6.20	.82	6.27	.66	5.60	.89	200.23	74.64
6. Unenriched/Contingent Pay	3.63	1.18	2.93	1.51	3.67	1.48	3.33	1.39	2.73	.83	35.39	25.55
7. Enriched/VA-VR Pay	5.73	.75	4.27	1.22	5.70	.71	5.80	.92	5.57	.42	172.22	53.13
8. Unenriched/VA-VR Pay	3.33	.78	2.87	1.22	3.03	.81	4.53	1.48	2.03	1.05	33.05	30.61

Diagnostic Survey. Supporting the task manipulation, there was a significant difference between the perceived task enrichment for those who participated on the enriched and unenriched tasks (32.28 vs. 37.60, $F = 7.78$, $p<.01$). Univariate analysis of variance were conducted for each measure of task dimension and the motivating potential score, the results are presented in Table 14. The six univariate F-ratios reach statistical significance for the task dimensions factor. The experimental manipulation significantly affected the task dimensions of variety ($F(7,72) = 12.40$, $p<.0001$), identity ($F(7,72) = 5.36$, $p<.0001$), significance ($F(7,72) = 26.02$, $p<.0001$), autonomy ($F(7,72) = 26.97$, $p<.0001$), feedback ($F(7,72) = 43.52$, $p<.0001$) and the motivating potential score ($F(7,72) = 38.56$, $p<.0001$).

Table 14

COMPARISON OF MEAN TASK DIMENSION SCORES FOR PARTICIPANTS IN THE TWO TASK CONDITIONS[a]

Task Dimension	Wilks' Lambda	F-Ratio	Sig. of F
Variety	0.453	12.40	0.0001
Identity	0.657	5.36	0.0001
Significance	0.283	26.02	0.0001
Autonomy	0.276	26.97	0.0001
Feedback	0.191	43.52	0.0001
Motivating Potential Score	0.210	38.56	0.0001

[a]Wilks' Lambda (U-Statistic) and Univariate F-Ratio with 7 and 72 degrees of freedom.

5.1.2 Pay Manipulations

While it cannot be proven that the pay manipulations were effective, it is believed that they were for the following reasons:

(a) None of the subjects expressed to the experimenter during the debriefing that they had felt *undeserving* of the pay and most of them acknowledged that they were aware of the pay contingencies.

(b) The performance contingent pay groups (i.e., the contingent pay and the VA-VR pay groups) reacted differently to the pay than did the noncontingent pay groups (i.e., the no pay and the noncontingent pay groups). An item included in the Task Satisfaction scale of the Work and Life Attitude Survey (see Appendix F, p.289, Item 3.5) reflects this attitude. The mean ratings for the noncontingent pay groups on this item were different from that of the performance contingent pay groups (3.25 vs 4.36 $F = 1.36$, $p<.01$).

(c) Since the type of pay was disclosed to all the participants prior to their taking part in the experiment, it was seen as unnecessary to assess whether the subjects in fact perceived the performance-pay contingencies as they had been designed.

5.1.3 Perceived Task Interest

Table 15 shows the group means and standard deviations for the ratings on the Semantic Differential Scale MY TASK. Since most of the means appear to fall on the left side of the scale, this indicates that the experimental groups also perceived the task as interesting. In order to assess the

TABLE 15

MEANS AND STANDARD DEVIATIONS (IN PARENTHESES) FOR TASK INTEREST RATINGS ON THE SEMANTIC DIFFERENTIAL SCALE MY TASK FOR SUBJECTS IN THE EIGHT EXPERIMENTAL GROUPS

SCALES	Enriched Task				Unenriched Task			
	No-Pay	Noncont-ingent Pay	Contin-gent Pay	VA-VR Pay	No-Pay	Noncont-ingent Pay	Contin-gent Pay	VA-VR Pay
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
	n=10	n=10	n=10	n=10	n-10	n=10	n=10	n=10
Good - Bad	4.80 (.43)	5.30 (.75)	5.15 (.74)	5.45 (1.05)	5.15 (.60)	5.15 (1.63)	5.50 (.38)	5.50 (.46)
Interesting - Boring	6.15 (.53)	6.85 (.53)	5.65 (.64)	6.15 (.45)	5.25 (.58)	6.50 (.45)	6.15 (.90)	5.50 (.52)
Complex - Simple	5.85 (.62)	5.00 (.55)	5.30 (.57)	6.15 (.78)	5.40 (.83)	5.50 (.54)	6.15 (1.09)	6.00 (.69)
Pleasant - Unpleasant	5.60 (1.41)	5.65 (1.44)	5.80 (.22)	5.60 (.48)	4.90 (.87)	5.60 (.74)	5.15 (1.84)	5.25 (.73)
Difficult - Easy	5.35 (1.62)	4.80 (1.22)	5.15 (.55)	5.15 (.64)	4.80 (.44)	4.55 (1.38)	5.85 (.65)	5.00 (.95)
Structured - Unstructured	5.00 (1.62)	5.15 (1.55)	4.85 (.78)	4.60 (1.18)	5.50 (1.43)	4.80 (.66)	4.25 (.61)	5.85 (1.11)
Attractive - Repulsive	5.25 (.53)	5.10 (.85)	5.65 (.84)	4.25 (.25)	5.25 (.52)	4.25 (.42)	5.50 (.88)	4.55 (.73)
Explicit - Vague	4.65 (.63)	5.20 (.63)	5.10 (.64)	5.65 (.65)	5.65 (.93)	5.25 (1.12)	4.85 (.51)	5.50 (1.23)
Clear- Hazy	5.30 (1.47)	4.95 (.75)	5.45 (1.09)	6.15 (.42)	4.95 (.72)	5.55 (.54)	5.75 (.95)	5.55 (.91)
Meaningful - Meaningless	5.95 (.51)	5.65 (1.32)	5.95 (.97)	5.45 (.55)	3.75 (.77)	4.65 (1.00)	5.65 (.70)	5.95 (.69)
Varied - Routine	6.10 (.65)	6.25 (.46)	4.45 (.65)	6.50 (1.38)	6.50 (1.42)	6.35 (.80)	4.35 (1.45)	6.25 (.96)
Tangible - Intangible	4.25 (1.62)	4.30 (1.48)	4.55 (1.45)	4.30 (1.81)	4.25 (.62)	4.25 (.80)	3.65 (1.45)	3.15 (.96)
Positive - Negative	5.65 (.96)	4.75 (.49)	5.55 (1.04)	3.95 (1.27)	5.35 (1.41)	4.85 (.56)	5.25 (.65)	5.55 (1.14)
Broad - Narrow	3.75 (1.28)	4.15 (1.44)	3.55 (.73)	4.25 (.97)	3.65 (1.23)	3.85 (.81)	3.85 (.56)	5.15 (.85)
Exciting - Dull	5.45 (.55)	6.25 (1.08)	5.25 (.63)	5.65 (.49)	3.95 (1.54)	5.35 (1.56)	6.15 (.73)	5.75 (.52)

perceived interest, the mean responses for the eight groups on the 15 items were summed. These means are in the predicted direction because the overall F-ratio was not significant, implying that the perceived task interest was the same for all the groups.

5.2 MULTIPLE DISCRIMINANT ANALYSES

Three multiple discriminant analyses were run. In the first analysis, the data were partitioned into two groups, according to the Task Structure Conditions. These two categories are:

(a) Enriched Task

(b) Unenriched Task

In the second analysis, the data were divided into four groups, depending on the performance-contingency pay condition. These groups are:

(a) No Pay

(b) Noncontingent Pay

(c) Contingent Pay

(d) Variable Amount-Variable Ratio (VA-VR) Pay Group.

Finally, in the third analysis the data were partitioned into eight groups according to both the Task Structure Conditions and the Pay Contingencies Conditions. These categories are:

(a) Enriched Task/No Pay

(b) Unenriched Task/No Pay

(c) Enriched Task/Noncontingent Pay

(d) Unenriched Task/Noncontingent Pay

(e) Enriched Task/Contingent Pay

(f) Unenriched Task/Contingent Pay

(g) Enriched Task/VA-VR Pay

(h) Unenriched Task/VA-VR Pay

For ease of reference we shall call these three categories of discriminant analysis as follows:

(1) Task Structure Categories.

(2) Pay Contingency Categories

(3) Task/Pay Categories

Discriminant analysis is a statistical technique used to study the differences between two or more groups and a set of discriminating variables. The "discriminating variables" are the characteristics used to distinguish among the groups. By considering the groups to be defined as a single nominal level variable (with each value denoting a different group), discriminant analysis is seen as a technique which relates one nominal level variable to several interval level variables.

In the analysis the groups are not defined as either the dependent or independent variables, and the same applies to the discriminating variables. If a research situation defines the group categories as dependent upon the discriminating variables, then the situation is analogous to the technique known as multiple regression. The primary difference is that discriminant analysis treats the dependent variable as being measured at the nominal level (i.e., groups). But when the values on the discriminating variables are defined as dependent upon the groups, discriminant analysis becomes an extension of multivariate analysis of variance. This situation typically arises from experimental settings, such as in this research, in which the group assignment is

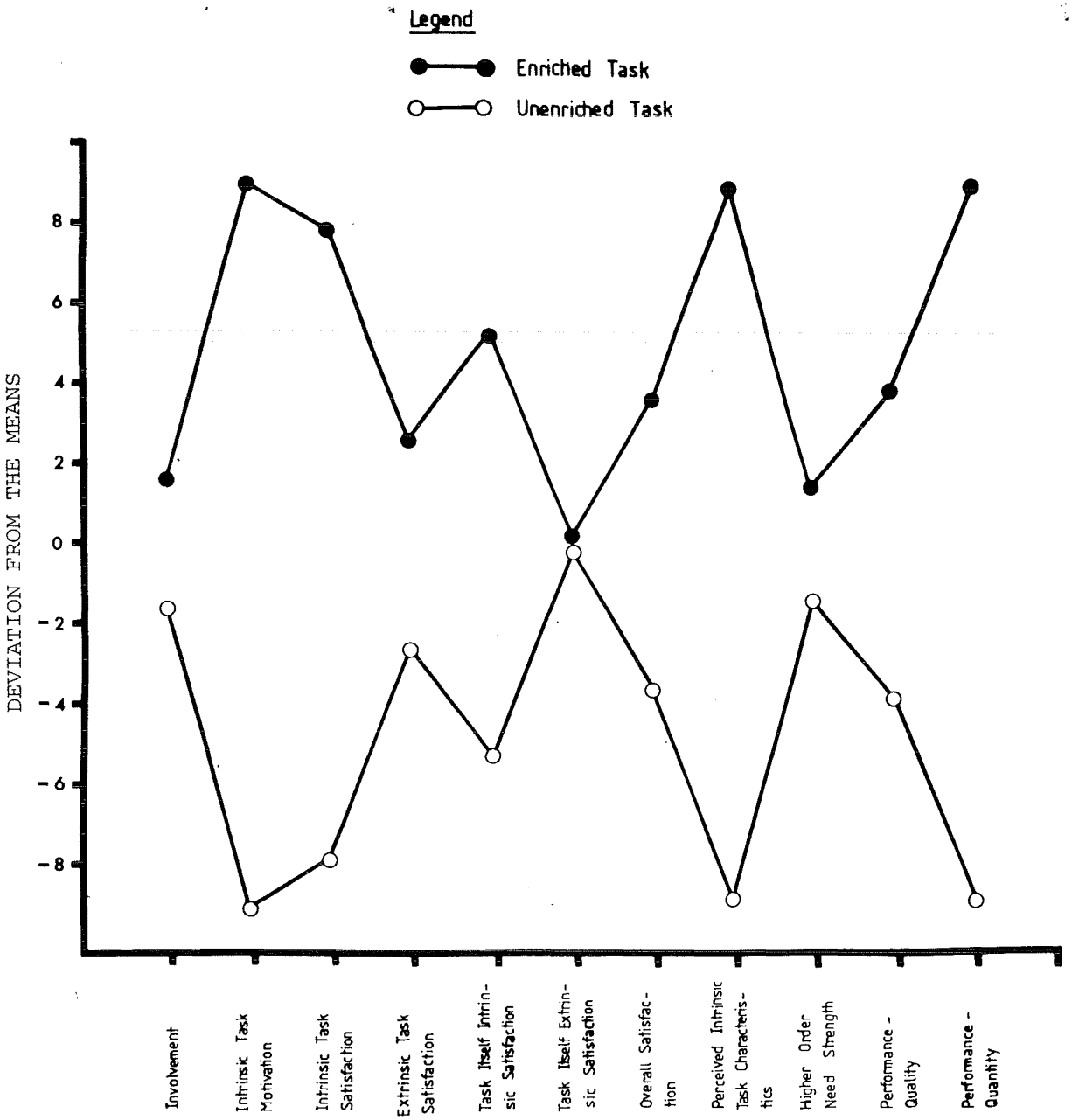

Figure 3. Comparison of group mean scores on variables across two groups as classified by task content.

hypothesised to cause differences in several variables simultaneously.

5.2.1 Task Content Categories

The data for these two categories are presented graphically in Figure 3, the data points being deviations from the group means. The discriminant scores contrast for the two Task Content groups are represented as deviations from the grand mean or group centroid in Table 16. A group centroid is an imaginary point which has co-ordinates that summarises the group's mean on each of the variables.

Because each group's grand mean (or centroid) represents the typical position for its group, we can study them spatially to obtain an understanding of how the groups differ. Figure 4 presents a spatial interpretation of the relative position of the two groups on the discriminating continuum.

It can be seen that there is a significant difference between the enriched and the unenriched Task Content groups, with the continuum showing a bipolar distribution of the two groups.

Table 17 shows the tests of significance for Task Content main effects. Table 18 shows the results of a one-way multivariate analysis of variance with canonical correlations for Task Content main effects.

For the purpose of getting a feel for how strongly any two variables are related, we can examine the correlation between them. The correlation coefficient is more useful for this purpose than the covariance, because it is standardised to vary between -1 and +1. If the group

TABLE 16

DISCRIMINANT SCORES CONTRASTED FOR THE TWO TASK CONTENT GROUPS REPRESENTED AS DEVIATIONS FROM THE GRAND MEAN

Task	Discriminant Contrast
Enriched	2.522
Unenriched	-2.522

TABLE 17

TASK CONTENT MAIN EFFECTS - TESTS OF SIGNIFICANCE USING WILKS' LAMBDA CRITERION AND CANONICAL CORRELATION

Test of Roots	Wilks' Lambda	F-Ratio	DF Hyp	DF Err	Sig.of F	Canon. Corr.
1 through 1	.023	59.279	10	14	.0001	.988

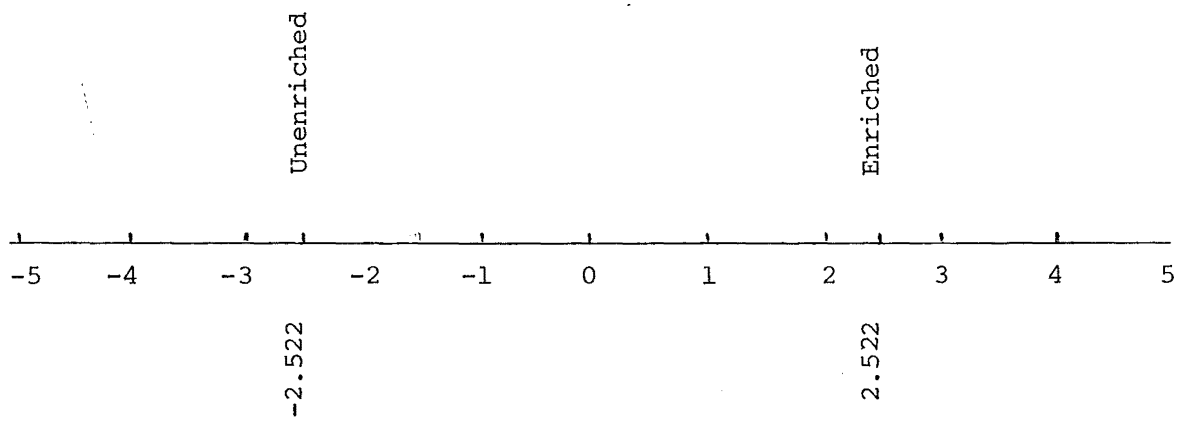

Figure 4 Relative Position of the Two Task Groups on the Discriminating Continuum.

TABLE 18

RESULTS OF A ONE-WAY MULTIVARIATE ANALYSIS OF VARIANCE (TASK CONTENT) WITH CANONICAL CORRELATIONS

Variable	F-Ratio[a]	Sig.of F	Canon. Corr.
General Effect			
Source TASK CONTENT	59.279	.0001	.988
Single Variable Effects			
Within TASK CONTENT			
Task Involvement	4.496	.045	
Intrinsic Task Motivation	135.100	.0001	
Intrinsic Task Satisfaction	179.100	.0001	
Extrinsic Task Satisfaction	63.620	.0001	
Task Itself Intrinsic Satisfaction	169.600	.0001	
Task Itself Extrinsic Satisfaction	0.365	.547	
Overall Satisfaction	159.900	.0001	
Perceived Intrinsic Task Characteristics	352.600	.0001	
Higher Order Need Strength	7.348	.008	
Performance - Quality	160.100	.0001	
Performance - Quantity	197.200	.0001	

[a]To be significant at the .01 level, the F-Ratio with (1,78) df should be equal to or greater than 6.96.

locations are indeed distinct (i.e., the groups' grand means are not identical), such as in our case, then the degree of dispersion within the groups will be less than the total dispersion. This is measured by the matrix W, which is called the within-group sums of squares and cross-products matrix. W is very much like the covariance coefficient, except that the deviations are measured from the mean of the group to which the case belongs (as opposed to the grand mean). The elements of W are defined as:

$$W_{ij} = \sum_{k=1}^{g} \sum_{m=1}^{n_k} (X_{ikm} - X_{ik.}) (X_{jkm} - X_{jk.})$$

Where,

g = number of groups

n_k = number of cases in group k

X_{ikm} = the value of variable i for case m in group k

X_{jkm} = the value of variable j for case m in group k

$X_{ik.}$ = mean value of variable i for those cases in group k

$X_{jk.}$ = mean value of variable i for those cases in group j

When the elements of W are divided by (n. - g) (n. - 1) we get the within-groups correlation matrix, where n. is the total number of cases over all groups. Each correlation coefficient is an estimate of the strength of the relationship between the corresponding pair of variables *within the groups*. This will usually differ from the total correlation, which is influenced by the group differences.

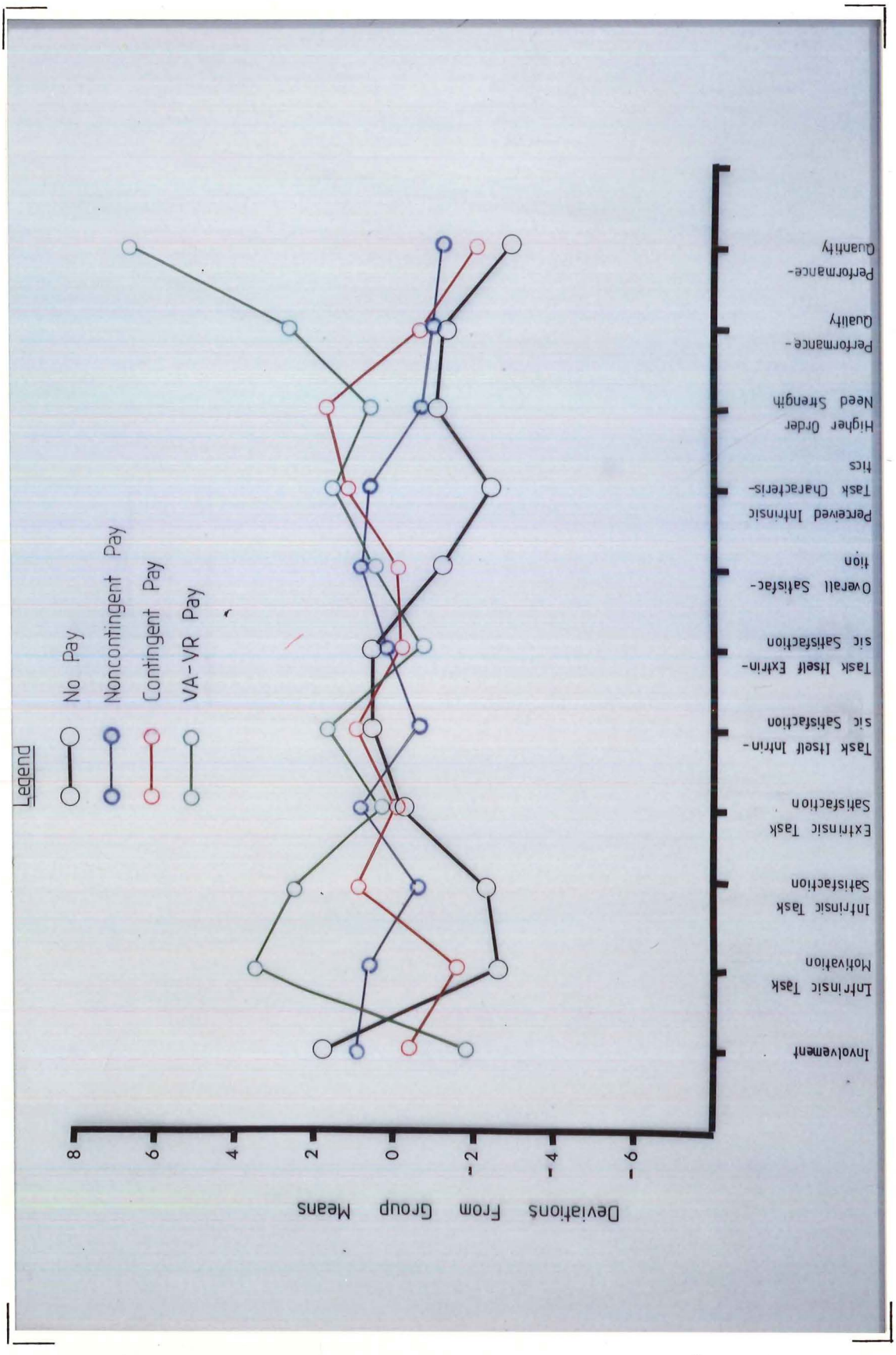

Figure 5. Comparison of Group Mean Scores on Variables across Eight Groups as Classified by Pay Contingency

Table 19 reports the within-groups correlation matrix for the Task Content Categories data. Clearly, most of the variables are highly correlated which indicates that the discriminating function is essentially a composite of all the variables with the exception of Task Involvement and Task Itself Extrinsic Satisfaction.

Taken together, these results are consistent with the graphical representation in Figure 3, the greatest discrimination is seen on Intrinsic Task Motivation, Intrinsic Task Satisfaction, Task Itself Intrinsic Satisfaction, Perceived Intrinsic Task Characteristics, Performance - Quality and Performance - Quantity. The group means are shown separately in Table 20.

Table 21 shows the results of the multiple discriminant analysis. One-hundred percent of the enriched subjects and one-hundred percent of the unenriched subjects were correctly predicted as falling into these groups. These high percentages show the groups to be particularly distinctive and homogeneous. Overall, 100% of the subjects had their categories predicted correctly.

5.2.2 Pay Contingency Categories

The data for these categories are presented graphically in Figure 5, the data points being deviation from the group means. The discriminant scores contrast for the four Pay Contingency groups are represented as deviations from the grand mean. This is given in Table 22. It, shows how the discriminant function differentiated between the subjects on the basis of Pay Contingency. Figure 6 shows the spatial representation of the relative position of the four groups on the discriminating continuum.

TABLE 19

POOLED WITHIN-GROUP CORRELATION MATRIX (TASK CONTENT)

VARIABLES	INTERCORRELATIONS 1	2	3	4	5	6	7	8	9	10	11
1. Task Involvement	1.00										
2. Intrinsic Task Motivation	0.10	1.00									
3. Intrinsic Task Satisfaction	-0.04	0.71	1.00								
4. Extrinsic Task Satisfaction	-0.20	0.33	0.38	1.00							
5. Task Itself Intrinsic Satisfaction	0.01	0.68	0.96	0.37	1.00						
6. Task Itself Extrinsic Satisfaction	0.01	0.04	0.09	0.73	0.07	1.00					
7. Overall Satisfaction	-0.18	0.55	0.74	0.67	0.59	0.28	1.00				
8. Perceived Intrinsic Task Characteristics	0.02	0.53	0.61	0.39	0.59	0.22	0.45	1.00			
9. Higher Order Need Strength	0.14	0.32	0.36	0.26	0.33	0.10	0.32	0.30	1.00		
10. Performance - Quality	-0.07	0.25	0.37	0.15	0.14	-0.04	0.24	0.26	0.11	1.00	
11. Performance - Quantity	0.15	0.36	0.32	0.24	0.44	0.26	0.27	0.30	0.23	0.30	1.00

NOTES: (i) $N = 80$

(ii) $P \leq 0.01$ when $r \geq 0.28$ and $p \leq 0.05$ when $r \geq 0.22$

TABLE 20

GROUP MEANS OF THE ELEVEN DEPENDENT MEASURES IN THE TWO TASK CONTENT GROUPS

Variable	Enriched	Unenriched
Task Involvement	31.475	28.325
Intrinsic Task Motivation	36.800	18.700
Intrinsic Task Satisfaction	33.175	17.650
Extrinsic Task Satisfaction	15.775	10.675
Task Itself Intrinsic Satisfaction	22.625	12.100
Task Itself Extrinsic Satisfaction	4.875	4.700
Overall Satisfaction	16.025	8.800
Perceived Intrinsic Task Characteristics	36.375	18.950
Higher Order Need Strength	35.625	32.725
Performance - Quality	17.633	10.000
Performance - Quantity	42.500	25.000

Table 21

RESULTS OF THE MULTIPLE DISCRIMINANT ANALYSIS

FOR TASK CONTENT GROUPS

Actual Group	Predicted Group Membership		
	1	2	N
Enriched Task	40 100.0%	0 0.0%	40
Unenriched Task	0 0.0%	40 100.0%	40
N	40	40	80

Enriched Group	100.00% Correct
Unenriched Group	100.00% Correct
Overall	100.00% Correctly Classified

It can be seen that there are significant differences among all groups although the relative locations of the No Pay, Noncontingent Pay and Contingent Pay groups are very close to each other. Essentially, we see a tetrapolar distribution but the distinction between three groups is less clear. This implies that the group populations have identical dispersion patterns, especially the No Pay and the Noncontingent Pay Groups.

Table 23 shows the test of significance for Pay main effects. Table 24 shows the results of a one-way multivariate analysis of variance for Pay Contingency main effects with canonical correlations. Table 25 gives the within-groups correlation matrix for the Pay Contingency Categories data. This reflects the effect of looking only within the groups rather than considering the total range of cases, which is influenced by the differences in the group grand means. Only Task Itself Extrinsic Satisfaction does not correlate well with the other variables. This indicates that the discriminating function is a composite of the other ten variables.

Taken together, these results are consistent with the graphical representations in Figure 5, greatest discrimination being shown for the variables of Intrinsic Task Motivation, Intrinsic Task Satisfaction, Task Itself Intrinsic Satisfaction, Perceived Intrinsic Task Characteristics, Performance-Quality and Performance-Quantity. The group means for these variables are reported in Table 26.

Table 27 shows the results of the multiple discriminant analysis. Sixty percent of the No Pay subjects, seventy percent of the Noncontingent Pay subjects, sixty percent of

TABLE 22

DISCRIMINANT SCORES CONTRASTED FOR THE FOUR PAY CONTINGENCY GROUPS REPRESENTED AS DEVIATIONS FROM THE GRAND MEAN

Pay	Discriminant Contrast
No Pay (NP)	-0.284
Noncontingent Pay (NCP)	-0.209
Contingent Pay (CP)	0.209
Variable Amount-Variable Ratio Pay (VA-VR)	1.845

TABLE 23

PAY MAIN EFFECTS - TESTS OF SIGNIFICANCE USING WILKS' LAMBDA AND CANONICAL CORRELATIONS

Test of Roots	Wilks' Lambda	F-Ratio	DF Hyp	DF Err	Sig.of F	Canon. Corr.
1 through 3	.171	5.095	30.00	185.59	.001	.806
2 through 3	.489	3.028	18.00	127.00	.001	.606
3 through 3	.773	2.347	8.00	64	.028	.476

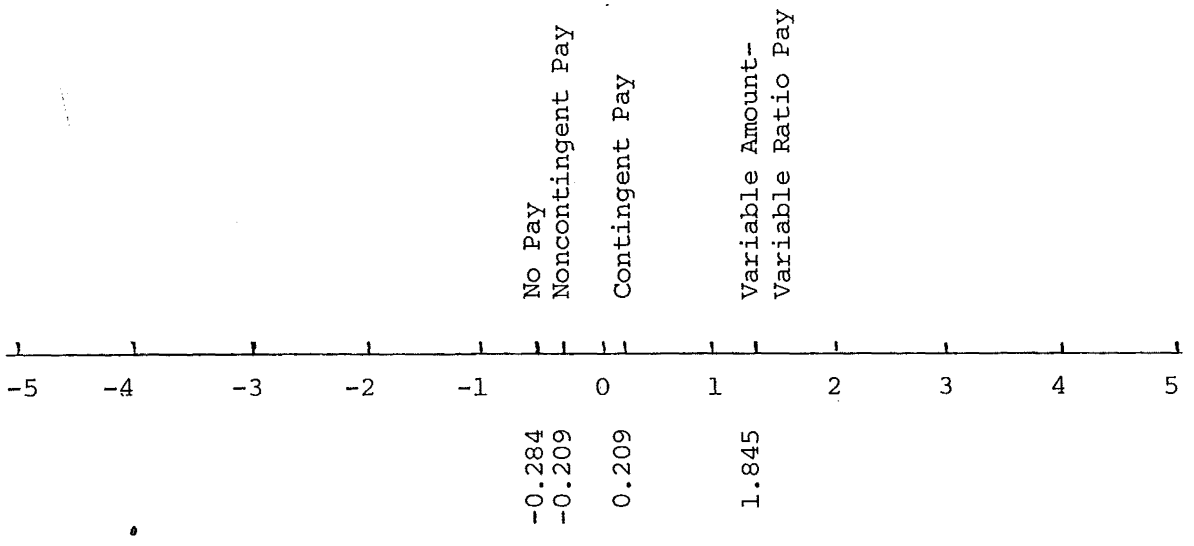

Figure 6 Relative Positions of the Four Pay Contingency Groups on the Discriminating Continuum.

TABLE 24

RESULTS OF A ONE-WAY MULTIVARIATE ANALYSIS OF VARIANCE (PAY CONTINGENCY) WITH CANONICAL CORRELATIONS

Variable	F-Ratio[b]	Sig.of F	Canon. Corr.
General Effect			
Source PAY CONTINGENCY	2.732	.008	.768
Single Variable Effects			
Within PAY CONTINGENCY			
Task Involvement	0.976	.421	
Intrinsic Task Motivation	3.034	.050	
Intrinsic Task Satisfaction	3.176	.043	
Extrinsic Task Satisfaction	0.677	.575	
Task Itself Intrinsic Satisfaction	3.207	.042	
Task Itself Extrinsic Satisfaction	1.866	.164	
Overall Satisfaction	3.244	.040	
Perceived Intrinsic Task Characteristics	4.309	.015	
Higher Order Need Strength	1.638	.208	
Performance - Quality	9.459	.001	
Performance - Quantity	8.621	.001	

[b]To be significant at the .01 level, the F-Ratio with (3,76) df should be equal to or greater than 4.08.

TABLE 25

POOLED WITHIN-GROUPS CORRELATION MATRIX (PAY CONTINGENCY)

VARIABLES	INTERCORRELATIONS										
	I	2	3	4	5	6	7	8	9	10	11
1. Task Involvement	1.00										
2. Intrinsic Task Motivation	0.30	1.00									
3. Intrinsic Task Satisfaction	0.22	0.91	1.00								
4. Extrinsic Task Satisfaction	0.14	0.69	0.73	1.00							
5. Task Itself Intrinsic Satisfaction	0.24	0.90	0.99	0.73	1.00						
6. Task Itself Extrinsic Satisfaction	-0.01	0.10	0.15	0.60	0.14	1.00					
7. Overall Satisfaction	0.11	0.85	0.92	0.84	0.88	0.25	1.00				
8. Perceived Intrinsic Task Characteristics	0.25	0.87	0.90	0.74	0.89	0.19	0.85	1.00			
9. Higher Order Need Strength	0.24	0.43	0.42	0.40	0.40	0.18	0.41	0.38	1.00		
10. Performance - Quality	0.24	0.74	0.82	0.68	0.83	0.09	0.80	0.86	0.31	1.00	
11. Performance - Quantity	0.25	0.76	0.93	0.75	0.95	0.15	0.89	0.94	0.51	0.50	1.00

NOTES: (i) n = 80
(ii) $P \leq 0.01$ when $r \geq 0.28$ and $P \leq 0.05$ when $r \geq 0.22$

TABLE 26

GROUP MEANS OF THE ELEVEN DEPENDENT MEASURES

IN THE FOUR PAY CONTINGENCY GROUPS

Variable	No Pay	Noncon-tingent	Contin-gent	VA-VR
Task Involvement	31.450	29.400	30.650	28.100
Intrinsic Task Motivation	25.100	26.050	28.300	31.550
Intrinsic Task Satisfaction	23.000	26.150	24.700	27.800
Extrinsic Task Satisfaction	12.900	12.950	13.900	13.150
Task Itself Intrinsic Satisfaction	15.700	17.950	16.700	19.100
Task Itself Extrinsic Satisfaction	5.150	4.450	5.000	4.550
Overall Satisfaction	11.100	12.550	13.050	12.950
Perceived Intrinsic Task Characteristics	25.150	28.750	28.200	28.550
Higher Order Need Strength	32.950	35.800	33.250	34.700
Performance - Quality	12.517	12.850	12.783	17.117
Performance - Quantity	33.292	34.125	34.958	42.792

TABLE 27

RESULTS OF THE MULTIPLE DISCRIMINANT ANALYSIS FOR PAY CONTINGENY GROUPS

Actual Group	Predicted Group Membership				
	1	2	3	4	N
No Pay	12 60.0%	3 15.0%	3 15.0%	2 10.0%	20
Noncontingent Pay	2 10.0%	14 70.0%	3 15.0%	1 5.0%	20
Contingent Pay	3 15.0%	3 15.0%	12 60.0%	2 10.0%	20
Variable Amount-Variable Ratio Pay	0 0.0%	0 0.0%	2 10.0%	18 90.0%	20
N	17	20	20	23	80

No Pay	60.00% Correct
Noncontingent Pay	70.00% Correct
Contingent Pay	60.00% Correct
VA-VR Pay	90.00% Correct
Overall	70.00% Correctly Classified

the Contingent Pay subjects and ninety percent of the VA-VR Pay subjects were correctly predicted as falling into these groups. These percentages indicate that the groups are relatively distinctive although slightly heterogeneous. Overall, seventy percent of all the subjects had their categories predicted correctly.

5.2.3 Task/Pay Categories

The data for these categories are graphically presented in Figure 7, with the data points being the deviations from the group means. The discriminant scores contrast for the eight Task/Pay groups are represented as deviations from the grand mean in Table 28. The spatial interpretation of the relative positions of the grand means along the discriminating continuum is presented diagrammatically in Figure 8.

These results reflect that there are significant differences among all groups with the distinguishing feature of their discrimination being Task Content. Thus, we see that the groups working on the enriched task are on the positive side of the continuum and those working on the unenriched task on the negative side. We also see a bipolar distinction for each task group with the same Pay Contingency but different Task Content. This distinction is somewhat clearer than the analysis for Pay Contingency Categories and more homogeneous.

Table 29 gives the tests of significance for Task/Pay,main effects. Table 30 shows the results of a one-way MANOVA for Task/Pay main effects with canonical correlations.

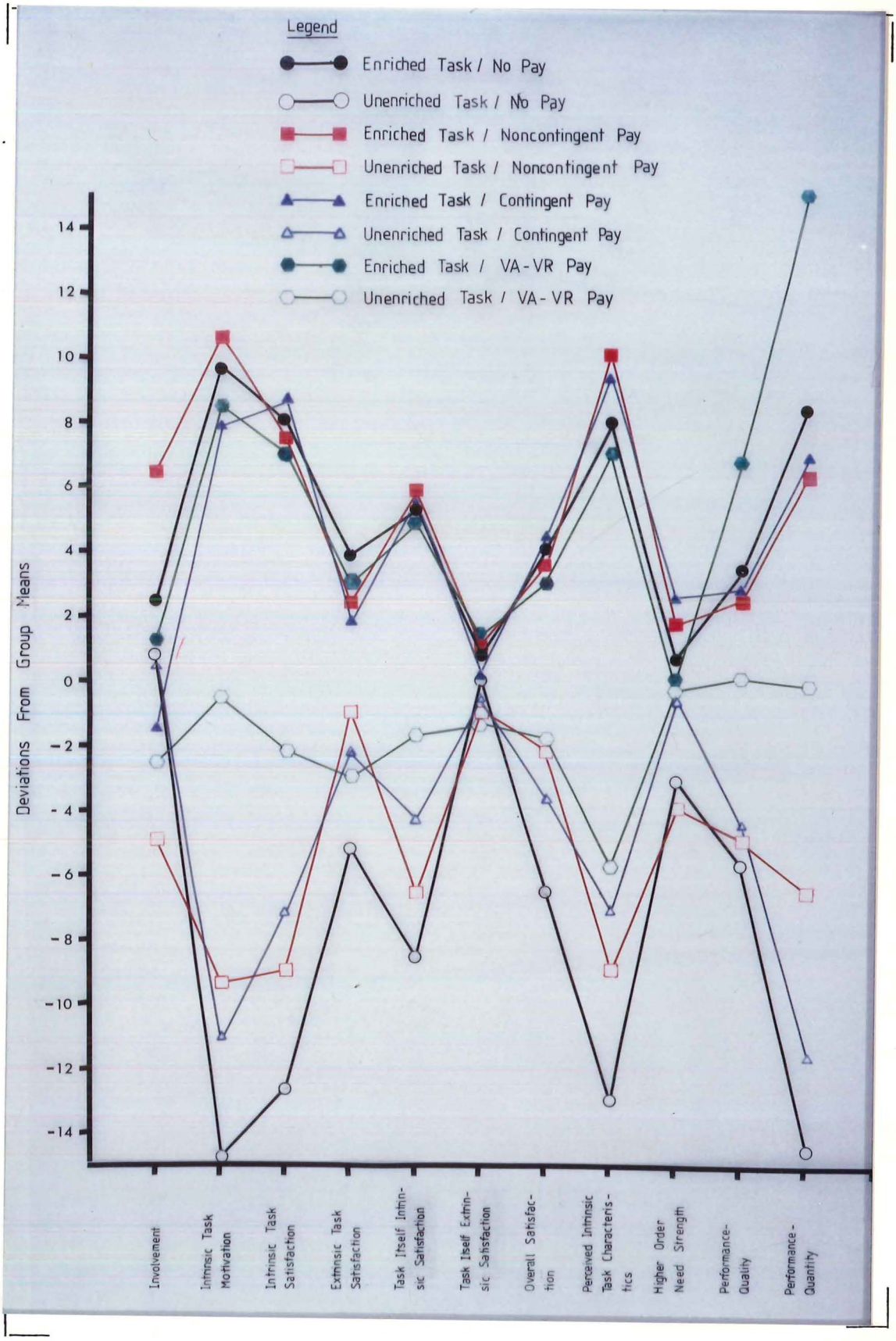

Figure 7. Comparison of Group Mean Scores on Variables across Eight Groups as Classified by Task/Pay.

TABLE 28

DISCRIMINANT SCORES CONTRAST FOR THE EIGHT TASK/PAY GROUPS

REPRESENTED AS DEVIATIONS FROM THE GRAND MEAN

Task X Pay	Discriminant Contrast
A. Enriched/No Pay	3.002
B. Unenriched/No Pay	-5.550
C. Enriched/Noncontingent	3.186
D. Unenriched/Noncontingent	-3.686
E. Enriched/Contingent	3.687
F. Unenriched/Contingent	-3.405
G. Enriched/Variable Amount-Variable Ratio	3.916
H. Unenriched/Variable Amount-Variable Ratio	-1.515

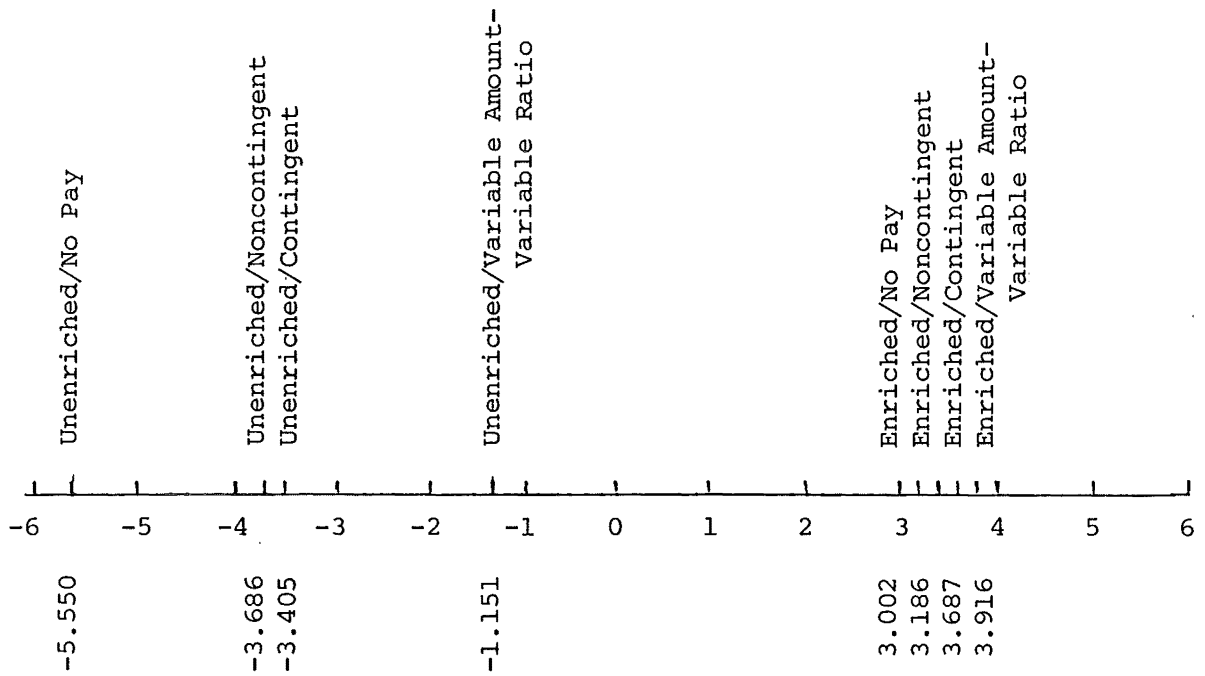

Figure 8 Relative Positions of the Eight Task/Pay Groups on the Discriminating Continuum.

Table 29

TASK/PAY MAIN EFFECTS - TESTS OF SIGNIFICANCE USING WILKS' LAMBDA CRITERION AND CANNONICAL CORRELATIONS

Test of Roots	Wilks' Lambda	F-Ratio	DF Hyp	DF Err	Sig .of F	Canon. Corr.
1 through 7	.010	6.437	70.00	374.17	.0001	.967
2 through 7	.156	2.667	54.00	338.13	.0001	.770
3 through 7	.383	1.731	40.00	295.69	.006	.554
4 through 7	.545	1.532	28.00	246.74	.008	.496
5 through 7	.722	1.248	18.00	191.59	.048	.408
6 through 7	.886	0.972	10.00	131.00	.227	.306
7 through 7	.956	0.751	4.00	66.00	.471	.209

TABLE 30

RESULTS OF A ONE-WAY MULTIVARIATE ANALYSIS OF VARIANCE (TASK/PAY) WITH CANONICAL CORRELATIONS

Variable	F-Ratio[c]	Sig.of F	Canon. Corr.
General Effect			
Source TASK/PAY	6.437	.0001	.967
Single Variable Effects			
Within TASK/PAY			
Task Involvement	1.965	.187	
Intrinsic Task Motivation	29.902	.0001	
Intrinsic Task Satisfaction	36.725	.0001	
Extrinsic Task Satisfaction	11.232	.0001	
Task Itself Intrinsic Satisfaction	33.891	.0001	
Task Itself Extrinsic Satisfaction	0.985	.449	
Overall Satisfaction	33.621	.0001	
Perceived Intrinsic Task Characteristics	65.263	.0001	
Higher Order Need Strength	2.119	.0522	
Performance - Quality	58.213	.0001	
Performance - Quantity	69.688	.0001	

[c]To be significant at the .01 level, the F-Ratio with (7,72) df should be equal to or greater than 2.91.

In Table 31, the within groups correlation matrix is reported. This reflects that the discriminating function is a composite of all the dependent variables with the exception of Task Involvement.

Taken together, these results are consistent with the graphical representations in Figure 7, with the greatest discriminations being shown for eight of the eleven variables: Intrinsic Task Motivation, Intrinsic Task Satisfaction, Extrinsic Task Satisfaction, Overall Satisfaction, Perceived Intrinsic Task Characteristics, Performance-Quality, and Performance-Quantity. The group means are not shown on the figure, however, they are reported separately in Table 32.

Table 33 shows the results of the multiple discriminant analysis. As it can be seen the percentages of correct predictions for all the subjects in the eight different groups fall within the range of 80% - 90%. The overall correct prediction of all the subjects is 88.25%.

When we compare the results for the three analyses, we can see that the groups discriminate the subjects quite clearly. However, it is clearly obvious that the Task Content Categories are better discriminators while Pay Contingency Categories are a poor set of characteristics to discriminate the groups upon. When taken together, the discriminating function of these two variables increases. This is indicated in the results of the discriminate analysis for Task/Pay Categories.

These methods of partitioning the data will be further used in the two-way multivariate analyses of variance in section 5.4 of this chapter.

Table 31

POOLED WITHIN-GROUPS CORRELATION MATRIX (TASK/PAY)

VARIABLES	INTERCORRELATIONS 1	2	3	4	5	6	7	8	9	10	11
1. Task Involvement	1.00										
2. Intrinsic Task Motivation	0.18	1.00									
3. Intrinsic Task Satisfaction	0.01	0.64	1.00								
4. Extrinsic Task Satisfaction	0.03	0.66	0.80	1.00							
5. Task Itself Intrinsic Satisfaction	0.04	0.61	0.95	0.80	1.00						
6. Task Itself Extrinsic Satisfaction	0.02	0.04	0.32	0.36	0.28	1.00					
7. Overall Satisfaction	-0.11	0.54	0.71	0.66	0.55	0.32	1.00				
8. Perceived Intrinsic Task Characteristics	0.04	0.43	0.31	0.30	0.61	0.54	0.81	1.00			
9. Higher Order Need Strength	0.14	0.32	0.62	0.67	0.51	0.68	0.88	0.93	1.00		
10. Performance - Quality	0.10	0.74	0.95	0.78	0.55	0.23	0.48	0.71	0.81	1.00	
11. Performance - Quantity	0.09	0.64	0.73	0.69	0.89	0.21	0.53	0.52	0.62	0.54	1.00

NOTES: (i) $n = 80$
(ii) $P \leq 0.01$ when $r \geq 0.28$ and $p \leq 0.05$ when $r \geq 0.22$

TABLE 32

GROUP MEANS OF THE ELEVEN DEPENDENT MEASURES IN THE EIGHT TASK/PAY GROUPS

VARIABLES	TASK/PAY GROUPS A	B	C	D	E	F	G	H
Task Involvement	32.300	30.600	28.400	30.400	36.300	25.000	28.900	27.300
Intrinsic Task Motivation	37.300	12.900	35.600	16.500	38.300	18.300	36.000	27.100
Intrinsic Task Satisfaction	33.300	12.700	34.100	18.200	32.900	16.500	32.400	23.200
Extrinsic Task Satisfaction	17.000	8.800	15.000	10.900	15.500	12.300	15.600	10.700
Task Itself Intrinsic Satisfaction	22.600	8.800	22.800	13.100	22.600	10.800	22.500	15.700
Task Itself Extrinsic Satisfaction	5.500	4.800	4.700	4.200	4.800	5.200	4.500	4.600
Overall Satisfaction	16.400	5.800	16.400	8.700	15.900	10.200	15.400	10.500
Perceived Intrinsic Task Characteristics	35.600	14.700	37.000	20.500	37.700	18.700	35.200	21.900
Higher Order Need Strength	34.800	31.100	36.700	34.900	35.900	30.600	35.100	34.300
Performance - Quality	17.067	7.967	16.533	9.167	16.467	9.100	20.467	13.766
Performance - Quantity	42.572	20.013	41.254	22.751	41.010	22.748	51.246	34.503

RESULTS OF THE MULTIPLE DISCRIMINANT ANALYSIS FOR TASK/PAY GROUPS

Actual Group	Predicted Group Membership								
	A	B	C	D	E	F	G	H	N
A. Enriched/No Pay	8 80.0%	0 0.0%	1 10.0%	0 0.0%	1 10.0%	0 0.0%	0 0.0%	0 0.0%	10
B. Unenriched/No Pay	0 0.0%	9 90.0%	0 0.0%	1 10.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	10
C. Enriched/Noncontingent	1 10.0%	0 0.0%	8 80.0%	0 0.0%	1 10.0%	0 0.0%	0 0.0%	0 0.0%	10
D. Unenriched/ Noncontingent	0 0.0%	0 0.0%	0 0.0%	9 90.0%	0 0.0%	1 10.0%	0 0.0%	0 0.0%	10
E. Enriched/ Contingent	0 0.0%	0 0.0%	1 10.0%	0 0.0%	9 90.0%	0 0.0%	0 0.0%	0 0.0%	10
F. Unenriched/ Contingent	0 0.0%	1 10.0%	0 0.0%	0 0.0%	0 0.0%	9 90.0%	0 0.0%	0 0.0%	10
G. Enriched/ Variable Amount-Variable Ratio	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 10.0%	9 90.0%	0 0.0%	10
H. Unenriched/ Variable Amount-Variable Ratio	0 0.0%	1 10.0%	0 0.0%	0 0.0%	0 0.0%	1 10.0%	0 0.0%	8 80.0%	10

A. Enriched Task/No Pay	80.00% correct
B. Unenriched Task/No Pay	90.00% correct
C. Enriched Task/Noncontingent Pay	80.00% correct
D. Unenriched Task/Noncontingent Pay	90.00% correct
E. Enriched Task/Contingent Pay	90.00% correct
F. Unenriched Task/Contingent Pay	90.00% correct
G. Enriched Task/VA-VR Pay	90.00% correct
H. Unenriched Task/VA-VR Pay	80.00% correct

Overall 88.25% Correctly Classified

5.3 TWO-WAY MULTIVARIATE ANALYSIS OF VARIANCE

Apart from the one-way MANOVA's which were reported in the previous section in relation to the discriminant analyses of two-way MANOVA was run to study the interactive effect of the two independent variables: Task Content and Pay Contingency.

The results of the multivariate and univariate analyses are shown in Table 34. The multivariate F for the pay contingency variable was significant beyond the .05 level. Univariate analyses of variance revealed that pay contingency had a significant effect upon a number of dependent variables, including intrinsic task motivation, intrinsic task satisfaction, task itself intrinsic satisfaction, overall satisfaction, perceived intrinsic task characteristics, performance-quality and performance-quantity.

The multivariate F for the task content factor was highly significant beyond the .001 level. Univariate analyses of variance revealed significant effects upon the dependent variables of task involvement, intrinsic task motivation, intrinsic task satisfaction, extrinsic task satisfaction, task itself intrinsic satisfaction, overall satisfaction, perceived intrinsic task characteristics, higher order need strength, performance-quality and performance-quantity. The interaction between task content and pay contingency resulted in a nonsignificant ($p>.05$) multivariate F.

Cell means and the results of multiple comparisons of cell means using the Newman-Keuls test (Kirk, 1968) are shown in Tables 35 and 36 for the task content and pay contingency factors, respectively. Data for only those

TABLE 34

MULTIVARIATE AND UNIVARIATE ANALYSES OF VARIANCE

FOR TASK CONTENT x PAY CONTINGENCY

	Task Content	Pay Contingency	Interaction
Multivariate F	59.28***	4.97*	1.94
Univariate F Task			
Task Involvement	5.50**	0.98	1.72
Intrinsic Task Motivation	120.93***	3.03*	2.54
Intrinsic Task Satisfaction	182.65***	3.18*	0.91
Extrinsic Task Satisfaction	82.23***	8.68*	2.89
Task Itself Intrinsic Satisfaction	162.28***	3.21*	1.76
Task Itself Extrinsic Satisfaction	0.49	1.87	0.61
Overall Satisfaction	208.50***	3.24*	0.40
Perceived Intrinsic Task Characteristics	457.93***	4.31**	2.66
Higher Order Need Strength	7.84**	1.64	0.21
Performance-Quality	233.26***	9.46**	1.80
Performance-Quantity	396.45***	22.67***	1.98

*$p < .05$

**$p < .01$

***$p < .001$

TABLE 35

CONDITION MEANS FOR TASK CONTENT FACTORS

Dependent Variable	Task Content Condition	
	Enriched	Unenriched
Task Involvement	31.475	28.325
Intrinsic Task Motivation	36.800	18.700
Intrinsic Task Satisfaction	33.175	17.650
Extrinsic Task Satisfaction	15.775	10.675
Task Itself Intrinsic Satisfaction	22.625	12.100
Overall Satisfaction	16.025	8.800
Perceived Intrinsic Task Characteristics	36.375	18.950
Higher Order Need Strength	35.625	32.725
Performance - Quality	17.633	10.000
Performance - Quantity	42.500	25.000

dependent variables for which a significant univariate F was found are shown in these tables. Table 37 presents the data for the behavioural measure of intrinsic motivation, volunteering for an unscheduled, nonrewarded task session.

Hypothesis I predicted that subjects working on relatively enriched tasks would attribute more of their task motivation to intrinsic (task content) factors and would volunteer for unrewarded task sessions at a higher rate than would subjects working on unenriched tasks. Data relevant to this hypothesis are presented in Tables 35 and 37. Hypothesis I is partially supported. Subjects are more likely to attribute their performance to task content of intrinsic factors (as measured by intrinsic task motivation and perceived intrinsic task characteristics scales) in the enriched task condition than in the unenriched condition. However, there was no difference in the enriched and unenriched conditions regarding volunteer rates for the extra, nonrewarded session.

In Table 36 are presented data relevant to Hypotheses II and III. Hypothesis II predicted that subjects in contingent pay conditions would be more likely to attribute performance to task consequence or extrinsic factors than subjects in the noncontingent pay or no pay conditions. This prediction was supported when considering the dependent measure of intrinsic task motivation, but not supported for any of the other extrinsic attribution categories. Hypothesis III, which predicted that pay contingency would be associated with lower levels of both attributionally and behaviourally measured intrinsic motivation, was clearly contradicted by the data shown in Tables 36 and 37. The

TABLE 36

CONDITION MEANS FOR PAY CONTINGENCY FACTOR

Dependent Variable	Pay Contingency Condition			
	No Pay	Noncon-tingent	Contin-gent	VA-VR
Intrinsic Task Motivation	31.45[a]	29.40[ab]	30.65[b]	28.10
Intrinsic Task Satisfaction	23.00[a]	26.15[ab]	24.70[b]	27.80
Extrinsic Task Satisfaction	12.90[a]	12.95[a]	13.90	13.15
Task Itself Intrinsic Satisfaction	15.70[a]	17.95[ab]	16.70[b]	19.10
Overall Satisfaction	11.10[a]	12.55[a]	13.05	12.95
Perceived Intrinsic Task Characteristics	25.15[a]	28.75[ab]	28.20[bc]	28.55[c]
Performance - Quality	12.52[a]	12.85[ab]	12.78[b]	17.12
Performance - Quantity	33.29[a]	34.12[ab]	34.96[b]	42.79

NOTE: Common superscripts within a row indicate no significant ($p>.05$) difference between condition means.

TABLE 37

PERCENTAGE OF SUBJECTS VOLUNTEERING TO RETURN TO THE UNSCHEDULED, NONREWARDED SESSION[d]

Pay Condition	Task Content Condition		
	Enriched	Unenriched	Total
No Pay	50.00	44.50	47.25
Noncontingent	53.50	46.00	49.75
Contingent	60.00	75.00	67.50
Variable Amount-Variable Ratio	56.00	50.00	53.00
TOTAL	54.87	53.87	54.37

[d] $\chi^2 = 2.854$ ($p = .54$)

contingent pay condition was associated with both stronger attributions to intrinsic factors and higher volunteer rates for the unscheduled, nonrewarded session than either other condition.

Hypothesis IV predicted that performance quantity would be lower in the enriched task condition than in the unenriched condition due to the performance period, and that performance quantity would be greater in the contingent pay condition than in the other pay conditions. Table 35 does not support the first part of the hypothesis as performance quantity was significantly higher in the enriched task condition. The performance quantity data for pay contingency factor which are shown in Table 36 offer partial support for Hypothesis IV. The contingent pay condition had higher performance quantity than the no pay condition. However, the noncontingent condition did not differ significantly from the contingent pay condition while the VA-VR pay had significantly higher level of performance-quantity.

It was predicted by Hypothesis V that the enriched task condition would be associated with higher levels of performance quality than the unenriched condition and that performance quality would decrease in the contingent pay condition when compared to the other pay conditions. Table 35 presents data which support the prediction of an increase in quality in the enriched task condition. There were no significant difference between any of the pay conditions regarding performance with the exception of the VA-VR condition.

Hypothesis VI predicted that performance-quantity would be higher in the VA-VR pay condition irrespective of

task structure. Table 36 does not provide support for this prediction. If this prediction were to be upheld then there should be no significant differences between performance-quantity for the VA-VR pay conditions when subjects were working on either the enriched or the unenriched task. However, we see that there exist a significant difference between these two groups.

The prediction of Hypothesis VII that task satisfaction would be greater in the enriched task condition than in the unenriched condition was upheld by the data of the present study. Table 35 reveals that subjects in the enriched condition were more satisfied with both the intrinsic and extrinsic aspects of the study. They were also more satisfied with the intrinsic and extrinsic factors associated with the task than the unenriched subjects. Overall the subjects in the enriched task were also more satisfied than the subjects in the nonenriched condition.

Several other interesting results, not specifically hypothesized to occur, were found and should be noted. The task content factor also resulted in a significant effect upon extrinsic task satisfaction. Subjects in the enriched condition were found to be more involved with the task than the subjects in the unenriched condition. Also, subjects in the contingent pay condition reported greater overall satisfaction than the subjects in the noncontingent pay group, who, in turn were more satisfied with the whole experiment than the no pay condition subject. However, in the VA-VR pay, subjects were less satisfied with the whole experiment than the contingent pay subjects, while there were no significant difference for the VA-VR condition

and the noncontingent pay condition.

The data in Table 37 do not show significant differences among the different experimental conditions. A chi-square analysis of the frequency data upon which Table 37 is based proved this lack of significance ($\chi^2 = 2.854$; with df = 3, χ^2 should be larger than or equal to 11.341 to be significant at the .01 level).

5.4 INDIVIDUAL DIFFERENCES MODERATORS

Four individual difference variables were assessed as moderators of intrinsic task motivation, task satisfaction, perceived intrinsic task characteristics and the performance measures of quality and quantity. Both moderated regression and subgroup analyses (using median splits on the moderator variables) were performed for all tests. The moderator variables are:

(1) Age

(2) Sex

(3) Task Involvement

(4) Higher Order Need Strength

5.4.1 Moderator Variable: Age

The moderated regressions for this relationship were computed by entering the individual difference variable on the first step, the nine measures of Intrinsic Task Motivation, Task Satisfaction, Perceived Intrinsic Task Characteristics and Performance on the second step, and the nine measures x individual difference interaction term on the third. The results of this test are shown on Table 38. It is clear that the interaction effect is not

TABLE 38

MODERATING EFFECTS OF AGE ON SELF-REPORTS OF INTRINSIC TASK MOTIVATION, TASK SATISFACTION, PERCEIVED INTRINSIC TASK CHARACTERISTICS, AND PERFORMANCE MEASURES

Dependent Variables	Overall R^2	Change of R^2 due to the interaction term	F[e]
Intrinsic Task Motivation	0.043	0.027	1.92
Intrinsic Task Satisfaction	0.047	0.021	1.620
Extrinsic Task Satisfaction	0.024	0.011	0.240
Task Itself Intrinsic Satisfaction	0.048	0.027	1.920
Task Itself Extrinsic Satisfaction	0.061	0.021	1.620
Overall Satisfaction	0.2125	0.028	0.68
Perceived Intrinsic Task Characteristics	0.053	0.007	1.34
Performance - Quality	0.021	0.013	2.03
Performance - Quantity	0.047	0.002	0.525

[e] To be significant at the .05 level, the F-ratio with (1,78) df should be equal to or greater than 3.50.

significant for any of the dependent variables.

5.4.2 Moderator Variable: Sex

The moderated regressions for this relationship were computed in the same way as for age. Results are presented in Table 39. No evidence of interactive effects were found. It would seem that sex did not have a moderating influence on any of the dependent measures.

5.4.3 Moderator Variable: Task Involvement

The significant differences among Task Content conditions on Task Involvement measure found in Table 34 were potentially a matter of concern regarding the interpretation of the data of this study. Task Involvement was not a dependent measure per se, but was included as an individual differences variable which might prove to have a moderating effect upon other variable relationships. Despite the random assignment of subjects to conditions, significant differences in Task Involvement were obtained. We further examined the data for such interaction effects by means of a hierarchical regression analysis similar to the ones mentioned above. The results are shown in Table 40 (on page 168). It seems that no significant interaction effects exist for any of the dependent variables.

5.4.4 Moderator Variable: Higher Order Need Strength

Significant differences were also found among task content conditions and the higher order need strength measure in Table 34. Since higher order need strength measure was included as an individual differences variable,

TABLE 39

MODERATING EFFECTS OF SEX ON SELF-REPORTS OF INTRINSIC TASK MOTIVATION, TASK SATISFACTION, PERCEIVED INTRINSIC TASK CHARACTERISTICS, AND PERFORMANCE MEASURES

Dependent Variables	Overall R^2	Change of R^2 due to the interaction term	F^f
Intrinsic Task Motivation	0.090	0.008	0.64
Intrinsic Task Satisfaction	0.037	0.002	0.11
Extrinsic Task Satisfaction	0.053	0.023	1.71
Task Itself Intrinsic Satisfaction	0.049	0.003	0.17
Task Itself Extrinsic Satisfaction	0.045	0.003	0.53
Overall Satisfaction	0.044	0.002	0.11
Perceived Intrinsic Task Characteristics	0.103	0.011	0.85
Performance - Quality	0.060	0.004	0.159
Performance - Quantity	0.054	0.003	0.50

[f] To be significant at the .05 level, the F-ratio with (1,78) df should be equal to or greater than 3.50.

TABLE 40

MODERATING EFFECTS OF TASK INVOLVEMENT ON SELF-REPORTS OF INTRINSIC TASK MOTIVATION, TASK SATISFACTION, PERCEIVED INTRINSIC TASK CHARACTERISTICS, AND PERFORMANCE MEASURES

Dependent Variables	Overall R^2	Change of R^2 due to the interaction term	F^g
Intrinsic Task Motivation	0.042	0.022	1.30
Intrinsic Task Satisfaction	0.059	0.034	0.80
Extrinsic Task Satisfaction	0.037	0.024	0.72
Task Itself Intrinsic Satisfaction	0.025	0.016	0.53
Task Itself Extrinsic Satisfaction	0.028	0.019	0.50
Overall Satisfaction	0.005	0.002	0.28
Perceived Intrinsic Task Characteristics	0.063	0.049	0.88
Performance - Quality	0.023	0.019	0.45
Performance - Quantity	0.043	0.031	0.65

[g] To be significant at the .05 level, the F-ratio with (1,76) df should be equal to or greater than 4.0.

we further examined the data for interaction effects by means of a hierarchical regression analysis. The results are shown in Table 41. No significant interaction effects were found.

It was predicted by Hypothesis VIII that individual higher order need strength and task involvement would moderate the task perception-outcomes. Tables 40 and 41 present the results of the hierarchical regression analysis for these two task moderators. This prediction is not supported.

5.4.5 Post Hoc Analysis: Two-Way Multivariate Analysis of Variance

Apart from the hierarchical regression analyses on age and sex reported in the previous sections, four two-way MANOVA's were run:

(a) Task Content x Age

(b) Task Content x Sex

(c) Pay Contingency x Age

(d) Pay Contingency x Sex

These analyses were computed because the two variables of age and sex showed no significant effect on the dependent measures as moderator variables. Furthermore, other studies (e.g., Deci,Cascio and Krusell, 1973) have reported that task content and pay contingency would have a differential effect on male and female subjects and similarly on younger and older subjects. For these analyses, the data were partitioned into groups according to the variable codes given in Table 42.

TABLE 41

MODERATING EFFECTS OF HIGHER ORDER NEED STRENGTH ON SELF-REPORTS OF INTRINSIC TASK MOTIVATION, TASK SATISFACTION, PERCEIVED INTRINSIC TASK CHARACTERISTICS, AND PERFORMANCE MEASURES

Dependent Variables	Overall R^2	Change of R^2 due to the interaction term	F^h
Intrinsic Task Motivation	0.049	0.022	1.14
Intrinsic Task Satisfaction	0.077	0.034	0.97
Extrinsic Task Satisfaction	0.068	0.032	0.91
Task Itself Intrinsic Satisfaction	0.178	0.023	1.66
Task Itself Extrinsic Satisfaction	0.060	0.007	0.41
Overall Satisfaction	0.061	0.021	1.34
Perceived Intrinsic Task Characteristics	0.043	0.006	0.41
Performance - Quality	0.042	0.022	1.31
Performance - Quantity	0.090	0.018	1.26

[h] To be significant at the .05 level, the F-ratio with (1,76) df should be equal to or greater than 4.0.

TABLE 42

VARIABLES AND THEIR CORRESPONDING LEVEL CODES

Level Codes	Variable	
	Age	Sex
1	Up. to 19	Male
2	19-22	Female
3	22-27	
4	Over 27	

(a) Task Content x Age

The results are shown in Table 43. The Task Content x Age interaction appears for five variables. These interactions are similar for intrinsic task motivation, intrinsic task satisfaction, extrinsic task satisfaction, task itself intrinsic satisfaction and perceived intrinsic task characteristics. Table 44 gives the mean scores for each of the five dependent measures significantly affected by task content.

For those subjects participating in the enriched task, the five means for the five measures decrease till age 22 and then increase gradually. The opposite trend is noted for those subjects working on the unenriched task.

(b) Task Content x Sex

The results are shown in Table 45. The Task Content x Sex interaction appears for four of the 11 variables.

TABLE 43

RESULTS OF THE TWO-WAY MULTIVARIATE ANALYSIS OF VARIANCE

(TASK CONTENT X AGE) WITH CANONICAL CORRELATIONS

Variable	F-Ratio[i]	Sig.of F	Canon. Corr.
General Effects			
Source Task Content x Age	4.915	.001	.779
Single Variable Effects			
Within Task Content x Age			
Task Involvement	1.232	.305	
Intrinsic Task Motivation	20.147	.0001	
Intrinsic Task Satisfaction	27.129	.0001	
Extrinsic Task Satisfaction	6.974	.001	
Task Itself Intrinsic Satisfaction	25.334	.0001	
Task Itself Extrinsic Satisfaction	3.204	.029	
Overall Satisfaction	2.105	.031	
Perceived Intrinsic Task Characteristics	54.392	.0001	
Higher Order Need Strength	0.613	.609	
Performance - Quality	0.657	.549	
Performance - Quantity	0.221	.821	

[i] To be significance at the .01 level, the F-ratio with (3,68) df should be equal to or greater than 4.10.

TABLE 44

MARGINAL MEANS FOR DEPENDENT VARIABLES SIGNIFICANTLY AFFECTED BY TASK CONTENT CONDITION AND AGE OF SUBJECTS

Variable	Task Content Condition							
	Enriched				Unenriched			
	Age Group				Age Group			
	1	2	3	4	1	2	3	4
Intrinsic Task Motivation	36.500	31.100	38.833	39.000	17.360	21.167	20.000	18.100
Intrinsic Task Satisfaction	32.900	30.300	34.167	35.250	16.480	20.000	18.000	16.000
Extrinsic Task Satisfaction	15.950	14.400	16.333	17.500	11.240	17.333	10.860	9.333
Task Itself Intrinsic Satisfaction	22.300	21.900	24.000	24.000	13.200	11.000	10.000	9.750
Perceived Intrinsic Task Characteristics	35.700	36.000	36.333	39.250	18.320	20.167	16.333	14.600

TABLE 45

RESULTS OF THE TWO-WAY MULTIVARIATE ANALYSIS OF VARIANCE (TASK CONTENT X SEX) WITH CANONICAL CORRELATIONS

Variable	F-Ratio[j]	Sig.of F	Canon. Corr.
General Effects			
Source Task Content x Sex	2.298	.024	.529
Single Variable Effects			
Within Task Content x Sex			
Task Involvement	0.230	.633	
Intrinsic Task Motivation	1.495	.226	
Intrinsic Task Satisfaction	2.823	.098	
Extrinsic Task Satisfaction	13.972	.0001	
Task Itself Intrinsic Satisfaction	2.890	.094	
Task Itself Extrinsic Satisfaction	5.211	.026	
Overall Satisfaction	7.632	.007	
Perceived Intrinsic Task Characteristics	9.877	.002	
Higher Order Need Strength	0.350	.556	
Performance - Quality	9.136	.004	
Performance - Quantity	5.255	.025	

[j] To be significant at the .01 level, the F-Ratio with (1,68) df should be equal to or greater than 7.04.

The interaction with extrinsic task satisfaction was particularly strong. Table 46 shows the mean scores for the subjects for the Task Content - Sex interaction. There appears to be a general trend with the means on the four variables, being higher for female subjects on both tasks.

(c) Pay Contingency x Age

The results are shown in Table 47. No interactions were seen for any of the eleven dependent measures. It seems that with regard to pay contingency, subjects of all age groups react the same.

(d) Pay Contingency x Sex

Similar to Pay Contingency x Age, the results for the two-way MANOVA for Pay Contingency x Sex shows no significant interaction with the 11 dependent variables. The results for the two-way MANOVA are shown in Table 48.

TABLE 46

MARGINAL MEANS FOR DEPENDENT VARIABLES SIGNIFICANTLY AFFECTED BY TASK CONTENT CONDITION AND SEX OF SUBJECTS

Variable	Task Content Condition			
	Enriched		Unenriched	
	Male	Female	Male	Female
Extrinsic Task Satisfaction	12.607	16.733	7.549	9.305
Overall Satisfaction	12.425	16.191	6.062	8.230
Perceived Intrinsic Task Characteristics	28.650	37.000	12.887	19.337
Performance - Quality	13.067	18.081	6.768	9.841

TABLE 47

RESULTS OF THE TWO-WAY MULTIVARIATE ANALYSIS OF VARIANCE

(PAY CONTINGENCY X AGE) WITH CANONICAL CORRELATIONS

Variable	F-Ratio[k]	Sig.of F	Canon. Corr.
General Effect			
Source Pay Contingency x Age	1.442	.011	.710
Single Variable Effects			
Within Pay Contingency x Age			
Task Involvement	.655	.745	
Intrinsic Task Motivation	.985	.463	
Intrinsic Task Satisfaction	1.703	.110	
Extrinsic Task Satisfaction	1.310	.253	
Task Itself Intrinsic Satisfaction	1.744	.100	
Task Itself Extrinsic Satisfaction	1.000	.451	
Overall Satisfaction	1.361	.228	
Perceived Intrinsic Task Characteristics	1.634	.128	
Higher Order Need Strength	1.147	.347	
Performance - Quality	2.267	.030	
Performance - Quantity	2.114	.046	

[k] To be significant at the .01 level, the F-Ratio with (9,56) df should be equal to or greater than 2.75.

TABLE 48

RESULTS OF THE TWO-WAY MULTIVARIATE ANALYSIS OF VARIANCE

(PAY CONTINGENCY X SEX) WITH CANONICAL CORRELATIONS

Variable	F-Ratio[1]	Sig.of F	Canon. Corr.
General Effects			
Source Pay Contingency x Sex	1.061	.394	.587
Single Variable Effects			
Within Pay Contingency x Sex			
Tax Involvement	1.694	.179	
Intrinsic Task Motivation	1.039	.382	
Intrinsic Task Satisfaction	1.036	.384	
Extrinsic Task Satisfaction	0.222	.880	
Task Itself Intrinsic Satisfaction	0.844	.476	
Task Itself Extrinsic Satisfaction	0.200	.896	
Overall Satisfaction	0.748	.528	
Perceived Intrinsic Task Characteristics	2.098	.111	
Higher Order Need Strength	0.090	.965	
Performance - Quality	0.582	.629	
Performance - Quantity	1.436	.228	

[1] To be significant at the .01 level, the F-Ratio with (3,56) df should be equal to or greater than 4.16.

CHAPTER 6

DISCUSSION

In light of previous research and together with the findings of the present study, several points will be discussed in this chapter regarding the concept of intrinsic and extrinsic motivation. The discussion will be presented in four sections, as follows:

1. Variable main effects
2. The proposed hypotheses
3. The cognitive evaluation theory
4. Individual differences moderators

6.1 VARIABLE MAIN EFFECTS

One of the main points of interest in this study was whether or not the manipulations of task structure and financial rewards factors would have a significant effect on the dependent measures employed in this experiment and whether the combination of the two factors would have a differential effect. These factors have been reported to have significant effects in previous studies (Deci, 1975; Farr, 1976; Farr, Vance and McIntyre, 1977).

6.1.1 Task Structure

As a result of the manipulations of the five core dimensions of variety, identity, autonomy, significance and feedback in the task content of the in-basket background

information and instructions (this was measured by the JDS), a significant main effect was found. The difference between the enriched and the unenriched groups (labelled as task content categories) is shown most clearly by the discriminant scores contrast (Table 16, Figure 4) which portrays the relationship of the enriched groups to the unenriched. It is seen that significant differences exist between the two groups, that is, a bipolar distribution is evident. The multiple discriminant analysis performed (Table 21) shows each of these groups to be distinctive and homogeneous.

The results of the analysis of variance among the subjects' responses on each dependent measure indicated that there were significant effects of task content enrichment on 10 of the 11 dependent measures. Since task structure was an independent variable one would anticipate finding significant effects of the manipulations on these measures. However, the referents of two attitudes were not experimentally manipulated. Task involvement and higher order need strength were used as attitude measures for task moderators, nevertheless they were influenced by the experimental conditions. The scores on the dependent measures for the subjects in the enriched task condition were higher than the scores for the unenriched task subjects (Table 20) and the one-way MANOVA (Table 18) indicates that these scores are significantly higher.

A critical concern is whether the result of the manipulations in the task structure can lead to a significant increase in task involvement and higher order need strength. This issue essentially questions the discriminant validity of the Work and Life Attitude Survey (Warr, Cook and Wall,

1979) used to describe the subjects' reactions to the different task conditions.

According to Thorndike's (1933) *spread of effect*, the bolstering effect of a stimulus could spread forward and backward in time influencing the stimulus-response connections of the system. This spreading out was postulated to occur in a systematic fashion "influencing one most, its nearest neighbours next most, and so on" (p.67). Which stimulus-response connections are the "nearest neighbours" is not well defined but seems to be determined by the extent to which discriminable stimuli wihtin the environment are associated with a stimulus.

Thorndike's spread of effect is a plausible explanation for why the task structure manipulations in this study significantly affected task involvement and higher order need strength even though they were moderator variables.

It appears that manipulations in the task structure stresses both intrinsic and extrinsic outcomes. For this sample, task itself extrinsic satisfaction does not serve to discriminate between the task content groups.

The lack of discriminating ability of this variable is not surprising. It could be explained as an artifact of the task design.

6.1.2 Financial Reward

Although a significant main effect was found the differences between the different financial reward groups (labelled as pay contingency groups) are not very distinct. These differences are shown by the discriminant scores contrast (Table 22, Figure 6) which show the relationship

of each group to the others. Essentially there should be a tetrapolar distribution; however we see a bipolar one with no pay and noncontingent pay on the negative side of the continuum and contingent pay and VA-VR pay on the positive side. The multiple discriminant analysis performed (Table 27) shows the groups to be heterogeneous and not very distinctive.

There were significant effects of pay contingency on six of the 11 dependent measures. Since pay contingency was an independent variable one would expect the analysis of variance to show significant effects of financial reward manipulations on all the measures similar to the effects of task structure. These results raise some doubt about the discriminant validity of the measures used to describe the subjects' reactions to the different pay conditions.

Hughes (1969) concept of a *responsible reinforcer* is a possible explanation of why financial reward manipulations in the present study did not influence extrinsic task satisfaction, task itself extrinsic satisfaction, overall satisfaction, task involvement and higher order need strength. Hughes' responsible reinforcer concept suggests that it is possible that the susceptibility of a stimulus to conditioned affect is altered by the extent to which that stimulus is perceived as a responsible reinforcer. That is, the evaluation of a previously neutral stimulus is determined by the reinforcement with which it is responsible. Hughes postulated that "affect will be conditioned to multiple objects (responsible and non-responsible) to the extent that the subject does not isolate the source of his affect. To the degree that the subject is unable to identify the source of

his affect, all stimuli present and discriminable at the time of reinforcement will be treated as responsible sources and hence will be susceptible to conditioned affect" (p.17).

According to this concept, one would presume that the extrinsic task satisfaction, task itself extrinsic satisfaction, overall satisfaction, task involvement and higher order need strength scores were not influenced by the pay conditions because the subjects were able to isolate the source of their affect; this source had nothing to do with the financial rewards they received. Consequently, the satisfaction associated with the extrinsic aspects of the task and the task itself, as well as the overall satisfaction effect of the pay, were not associated with the manipulations in financial reward.

6.1.3 Task Structure and Financial Reward

A significant main effect was also found for the combination of task structure and financial reward factors (labelled as task/pay groups). The differences between the task/pay groups are shown by the discriminant scores contrast (Table 28, Figure 8) which reflect the relationship of each group to the others. It is seen that significant differences exist between all groups based on their task structure and a bipolar distribution is evident. As anticipated from the results of the discriminant analysis for financial reward, pay contingencies appear to have less significant contributions in discriminating subjects. The multiple discriminant analysis performed (Table 33) shows these groups to be more distinctive than when the subjects are partitioned according to their pay contingency alone, but, less distinctive than

when classified according to their task content.

As a result of the combined task structure and financial reward manipulations, there were significant effects of these factors on eight of the 11 dependent measures. These affects are reflected in the results of the multivariate analysis of variance (Table 34).

An internal construct called the incentive-motivational state has been postulated by Bindra (1968) which provides a rational explanation for the increase in affective response as a result of the combination of task structure and financial reward. Bindra's propositions are based upon a neuropsychological interpretation of incentive-motivational stimuli. According to him, incentive-motivational stimuli (contrasted with drive-induced stimuli) facilitates the perceptions of relevant sensory input (attention). Provided that a certain level of drive is present, incentive-motivational stimuli can facilitate, and are necessary for facilitating, the occurrence of particular instrumental responses. The facilitation of instrumental responding occurs from the creation of general central states that may be neither response specific nor drive specific.

At least two central states have been hypothesised by Bindra: a positive incentive-motivational state (PIMS) and a negative incentive-motivational state (NIMS). The PIMS, it was suggested, promotes the neural organisation of a variety of appetitive environmental responses, such as exploratory behaviour, and the NIMS promotes the neural organisation of aversive environmental rejecting response tendencies, such as withdrawal and escape. Scott and Rowland (1970) have suggested that these two motivational

states possess affective as well as arousal properties. According to Scott and Rowland, one effect of PIMS or NIMS is to influence an individual's perception of the environment by *selective attention* to the stimuli. This explanation assists in the interpretation of the results for the task/pay discriminant analysis. In the present experiment, the subjects were made aware of the type of financial reward they were to receive prior to the task session although the rewards were given after the task and just prior to responding to the Work and Life Attitude Survey questionnaire. Therefore, pay conditions could have caused selective attention or perception of the task stimuli during the experiment causing a reduction in the task affective responses.

The reinforcement used in the present study were intrinsic task reward and extrinsic monetary reward. From the above explanation one could conclude that the existence of a relationship between intrinsic task reward and extrinsic monetary reward is quite evident. However, the antagonistic or prognostic effects of extrinsic and intrinsic rewards postulated by Deci (1975) are not revealed. It also appears that reinforcement theory presents a more plausible explanation of the data.

In summary, the postulate that an incentive-motivational state can be conditioned by organisational reinforcers and subsequently influence attitudes and measures regarding various other organisational stimuli was generally substantiated, especially for stimuli associated with affective feelings regarding a responsible reinforcing stimulus. This does not imply that reinforcement produces an undifferentiated

halo effect. On the contrary, studies including the present one have demonstrated that people can reliably discriminate between various aspects of their environment and report them. This was evidenced in the present study by the subjects' differential responses to the eleven dependent measures.

The present study supports the notion that there is a motivational state which can be conditioned by organisational reinforcers and which in turn influences individual self-descriptions and performance measures of the work environment.

6.2 DISCUSSION OF THE PROPOSED HYPOTHESES

The results presented in the previous chapter only support Hypothesis VII. However, partial support is provided for Hypotheses I, II, IV, and V, while Hypotheses III, VI and VIII are not upheld. In addition, the results of the present study offers no support for the interaction of intrinsic and extrinsic task factors regarding task performance or satisfaction. Significant main effects for both task content and pay contingency were found, but the interaction of the two factors produced a nonsignificant multivariate F statistic (see Table 34). This finding is in agreement with previous work reported by Calder and Staw (1975), Eden (1975), Farr (1976) and Hamner and Foster (1975), but is in contrast to the predictions of the cognitive evaluation theory (Deci, 1975) and the findings of Pinder (1976). It should be noted however, that the results of Pinder were generally only of marginal statistical significance. Thus, empirical evidence in general suggests that intrinsic and extrinsic sources of task motivation do

not interact in their effects upon performance, satisfaction and task perceptions, but rather act independently. In the present research, the independence of the task content and pay contingency factors were shown by the significant multivariate main effects found for both factors and by the pattern of the univariate findings. Task content and pay contingency had differential patterns of effects upon the various dependent measures, although overlap did occur. The enriched task condition was associated with higher task satisfaction, higher performance quality and quantity, more attributed intrinsic motivation, more attributed extrinsic satisfaction due to both the task and the financial reward and a higher perception of intrinsic task characteristics when compared to the unenriched condition. The pay contingency factor with four levels of pay is more difficult to summarise than the task content factor. However, Table 26 suggests that the no pay and the noncontingent pay conditions had generally similar effects upon the dependent variables. If we contrast the contingent pay and the VA-VR pay conditions with the other two conditions, the following pattern emerges. Subjects in the contingent pay and VA-VR pay conditions were higher in task satisfaction, perceived intrinsic task characteristics, attributed intrinsic task motivation, attributed extrinsic satisfaction and had higher performance quality and quantity. It should be noted that pay was contingent only upon performance quality in all the pay conditions. The results that emerge from the manipulations of financial reward will be discussed in relation to the cognitive evaluation theory in the section to follow. In this section it will only be discussed in relation to the related findings in previous studies.

A related point is that the data presented here suggest that the assumption that motivation or behaviour may be attributed to only a single locus of causality is not tenable. The independence of intrinsic and extrinsic motivational states reflect the existence of multiple loci of perceived causality. Subjects were able to make simultaneous attributions of action to both task content and task consequence factors.

It is of special interest that not only did contingent pay fail to have a negative effect upon either attributed intrinsic task motivation or the behavioural measure of intrinsic motivation (volunteering for the extra session), but that this pay condition had a positive effect upon both measures of intrinsic motivation. Although Deci (1975) and others (e.g., Lepper et al., 1973) have argued that contingent financial rewards reduce intrinsic motivation, the present data indicate an enhancement effect. Feingold and Mahoney (1975) have presented data consistent with the above aspect of this research. Other research (e.g., Farr, 1976; Farr, Vance and McIntyre, 1977; Salancik, 1975) has failed to find any effect of reward contingency upon measures of intrinsic motivation.

Perhaps the most likely explanation for the enhancement effect of contingent rewards obtained in this research comes from reinforcement theory. Rewarded behaviour becomes more satisfying to the individual; thus motivation, intrinsic or extrinsic, is increased in an attempt to gain further satisfaction. This is evident in the effects of VA-VR pay has on the dependent measures. Thus, the contingent extrinsic reward could be interpreted as merely having an

additive effect in conjunction with task content upon the intrinsic motivation measures.

Several of the expected effects of task content and pay contingency upon performance and satisfaction were found. The enriched task condition was associated with higher levels of performance quality. This effect occurred even though the subjects generally produced work of high quality in the unenriched condition (in which the average rating of quality was 15 points out of a possible score of 30). It is likely that this overall quality was reflective of several situational characteristics, including the duration of the task session and the subject's attempts to do as the experimenter desired. The enriched task was also found to produce a higher quantity of performance. This finding contradicted previous work done in the laboratory (e.g., Farr, 1976; Hamner and Foster, 1975) which has explained this result in terms of the increased learning difficulty and performance difficulties associated with more complex tasks. The results of this research indicate that task enrichment does not imply complexity in task structure. The short duration of the task performance sessions in the previous laboratory studies could have been insufficient to allow subjects in enriched task conditions to perform at a level comparable to the subjects who had to perform the simpler[?] task in the unenriched condition. Our results indicate that enriched tasks may yield results of higher quality and quantity over any time duration. Future research should be directed toward better explanation of these performance differences. It should be noted that subjects in the unenriched condition of this study were provided with the information about the

problems to deal with in the in-basket items and were not required to make any final decisions about these factors but rather to make suggestions and implications only. On the other hand, the subjects in the enriched condition had to make the necessary decisions and they had to discover the problems in the in-basket items. Thus, the measures of performance in the enriched and unenriched conditions may not be completely comparable. Lack of complete comparability of the present measure would exist even if the subjects in the unenriched condition had to make final decisions for the problems. There are no data available in this research to test this possibility. Therefore, the conclusions regarding the performance differences in the task content conditions are especially tenuous ones.

Subjects in the enriched task condition did report higher satisfaction with the task. This finding is congruent with much of the published literature in job enrichment (e.g., Brief and Aldag, 1975; Ford, 1969; Hackman and Lawler, 1971; Hackman and Oldham, 1976; Oldham et al., 1976), and adds to the relatively few studies using experimental methodologies which have reported such data (e.g., Farr, 1976; Umstot et al., 1976).

The significant effect of the pay contingency factor upon satisfaction with the whole experiment was not expected. Previous research (e.g., Farr, 1976; Salancik, 1975) had failed to demonstrate such an effect. In the present study, the contingent pay condition yielded significantly higher overall satisfaction than the no pay condition. These results suggested that money was valued by the subjects, that performance was seen as a legitimate determiner of pay, and

that the positive affect created by pay influenced the affective responses to the task itself. It is also possible that pay changed the perceived characteristics of the task itself. The financially rewarded subjects perceived the task differently from the subjects in the no pay condition, as evidenced by the data of the perceived intrinsic task characteristics which measures task perceptions. Apparently the financial reward affected some or all of the core task dimensions (Hackman and Lawler, 1971) which then affected satisfaction with the task.

The idea that pay affected perceptions of the task, which in turn, influenced task satisfaction is seen in the results of the discriminant analyses. These analyses give some support to the proposed relationship. Although pay contingency and task content were significantly related to task perceptions, when pay contingency was used to predict task attributions only, intrinsic task satisfaction was significant. It should be noted that this is a post hoc interpretation of the results and should be considered cautiously. It would be informative in future research to use the Job Diagnostic Survey to assess the exact nature of such relationships via planned comparisons.

The enriched task condition resulted in stronger attributions of extrinsic satisfaction due to the task itself than the unenriched condition. The increased feedback of the enriched task may have led to a more favourable evaluation of the simulated organisation. Data from two field surveys of workers in a variety of occupations have found a similar relationship between perceptions of feedback in the job setting and satisfaction with the extrinsic aspects of the

task (Farr, 1978). This could result in higher levels of task motivation.

An alternative explanation for the finding that the subjects in the enriched task condition were more satisfied with the extrinsic aspects of the task, and the experiment than subjects in the unenriched condition is; that the result is an experimental effect. Experimenters were not blind to the conditions as the same experimenters were used in some of the sessions. The major problem which this raises is that the experimenters might have in some fashion communicated the expectation that the enriched condition would result in higher levels of satisfaction and quality of performance. If this were so, it might be expected that subjects who expressed satisfaction with the task itself would produce higher quality work. The correlations between production quality and task itself extrinsic satisfaction and task itself intrinsic satisfaction were .14 and .04 only, as shown in Table 19. This result argues against the quality and satisfaction results as being artifactual due to experimenter effects. The experimenters also followed scripts in all conditions which were written to avoid such effects.

A minor purpose of this research was to examine the adequacy of the Kruglanski (1975) proposal regarding the conceptualisation of intrinsic and extrinsic motivation. The results of this study suggests that there is some theoretical utility to the Kruglanski proposal, but problems were evident with it. The present results did indicate that, while item intercorrelations suggested that a single scale could measure intrinsic motivation, the measurement (and perhaps the conceptualisation) of extrinsic motivation should

be multidimensional. A total of seven scales were necessary to measure the various task consequence factors. The Kruglanski approach still suffers from some ambiguity in the classification of factors according to the content-consequence distinctions.

6.3 THE COGNITIVE EVALUATION THEORY

Cognitive evaluation theory and the overjustification hypothesis do not appear to offer a complete description of the relationship between the contingency of extrinsic reward and intrinsic motivation. In the present study contingent pay was found to have a facilitative, rather than a detrimental, effect upon intrinsic motivation.

Since the meaning of the term "intrinsic motivation" is rather obscure within the cognitive evaluation theory paradigm, the postulate has been variously interpreted. DeCharms (1968) provides two interpretations and, by implication, a third. He notes that one of the effects of an extrinsic reinforcer is to produce an immediate deterioration in task behaviour that was originally intrinsically motivated. In this case, ongoing performance while the extrinsic contingency is in effect, is suggested as an index of intrinsic motivation. The data of the present study does not support this proposal. Later, DeCharms observed that if one introduces a contingent extrinsic reinforcer, subjects will be less prone to manipulate a puzzle (engage in task responses) *after the reinforcer has been withdrawn.* The present study has not tested this assumption but if one compares the results for the no pay condition with the pay conditions it is quite evident that no such effect exists.

As a matter of fact, an opposite effect is observed. Finally, DeCharms notes, that "interest" in the task after the extrinsic reinforcer has been introduced may be decreased. The most common interpretation of this statement is that task responses will be affected either while the extrinsic contingency is in effect or, after it has been withdrawn (Deci, 1971; Kruglanski, Friedman and Zeevi, 1971). Once again, the data from this study show no decrease in self-reports of task interest or task attractiveness (Table 15) when extrinsic rewards were introduced.

The results from the introduction of a VA-VR pay condition further contradict the predictions of the cognitive evaluation theory. One would expect that according to this paradigm, the introduction of such a financial reward would result in either an increase or a decrease in task response independent of the task content and the pay condition, because of the difficulty in establishing the locus of causality. However, the data for this condition show that task response was highly dependent upon the task content. The data for the present research, in general, and for the VA-VR pay condition in particular, appears to suggest that working on the task itself during the experimental period is reinforcing to the subjects. Subjects in the contingent pay and VA-VR pay conditions had higher scores for performance-quality and performance-quantity and volunteered to return for the unscheduled, nonreward session at a higher rate than the no pay and the noncontingent pay conditions. These data appear to suggest that the cognitive evaluation theory does not provide a viable explanation of the phenomenon.

Reinforcement theorists would obviously expect that the introduction of an additional reinforcer suitably scheduled would increase the rate of responding as well as the favourability of self-reports. However, few would predict a simplistic additive effect without at least considering a number of qualifications. One, the organism may have been exposed to a prior contingency (in our case, the task) in which the additional reinforcer (in our case, the pay) served as a discriminative stimulus in the presence of which behaviour incompatible with task responses was reinforced (Scott, 1976). If so, the results of this study would predict that the introduction of the reinforcer (i.e., pay) would disrupt task behaviour maintained by another less powerful reinforcer (i.e., task structure). The evidence to support this view is found in the results from the discriminant analyses (section 5.2, p.129) where pay caused a decrease in the discriminant contrast for the 11 dependent measures.

Two, the absence of significant effects of pay conditions on performance-quality and performance-quantity would appear to be contrary to the predictions of the reinforcement theorists. Studies of the effect variations in quality and quantity of reinforcement (Kimble, 1961, pp. 137-140) can explain this lack of significance. Kimble has shown that the rate of responding increases *as a negatively accelerated function* with increases in magnitude of reinforcement. These studies suggest that if behaviour is already maintained at a high rate by reinforcement inherent in the task design, the addition of another contingent reinforcer may have little, if any, effect upon the rate.

Three, studies of the effects of *varied* reinforcement (i.e., variable schedules of reinforcement) have indicated an increase in task response when multiple contingencies are introduced (Kimble, 1961, pp.286-290). Although the literature on increase in response is complex, response would be enhanced when a durable reinforcer is introduced in those situations in which task responding is being maintained by other response-produced stimulus changes. According to this qualification the additional reinforcer may enhance the reinforcing properties of the response-produced stimulus by virtue of it being paired with the added reinforcing event. However, for the additional reinforcer to increase the rate of responding it must be administered on an effective schedule (interval or ratio). This qualification explains the results for the pay factor in this study. If we consider that the monetary reinforcer is attached to the successful passing of the experimental task period, then the noncontingent financial reward is a fixed-interval pay schedule in that the reinforcer is presented independent of responses (i.e., performance-quality) at a fixed time interval. We should note, however, that this designation is not totally accurate since, as in most jobs, the actual reinforcer, the money, was presented one day after the response was actually made. The second pay condition, the contingent pay, is essentially a fixed-ratio schedule, in that the reinforcer presentation is dependent upon response, and a fixed amount of financial reward was given for every response (score on the performance-quality measure) made. Finally, the third pay condition, the VA-VR pay can be classified as a variable schedule of reinforcement. As it was originally designed,

the no pay condition is the control group. If we compare the data for the different pay conditions a similar trend to that suggested by Kimble is noted. Furthermore, there is a general increase in task responses for both those working on the enriched and the unenriched rasks which reflects the enhancement effect of the financial rewards. This enhancement effect is higher when the task itself has reinforcing properties (i.e., the task is enriched).

The effects of extrinsic reinforcement contingencies (financial rewards) on self-reports of task attractiveness or task interest are obscure and quite probably complex. Kruglanski, Alon, and Lewis (1972) had elementary school subjects engage in a series of competitive games following which some groups were given a prize and then asked to report their enjoyment with the games. They found that the "prize" groups reported less enjoyment with the games than the "no prize" groups who simply completed the self-report measure. Apparently, however, those who *lost* in the prize groups were also included in the comparison of the self-reports and they may have contributed to these differences. Deci (1971) obtained a post-experimental self-report of task interest and task attractiveness to check the assumption that his Soma puzzle was intrinsically interesting [motivating?] and found no difference between his experimental and control groups. This finding is, of course, damaging to his hypothesis if, in fact, self-reports of task attractiveness are assumed to reflect intrinsic motivation.

The data for task interest or task attractiveness reported here show similar results to those of Deci. It should be noted, however, that the self-report of task interest

in this research was used as a check on the task interest which was to be held constant. It was not used as a dependent measure of intrinsic motivation. But if we wish to explain this lack of difference among the different experimental groups, the reinforcement theory is of assistance. According to this paradigm, if task responding can be maintained by reinforcing events inherent in the task design, the self-reports should ordinarily reflect a high level of task attractiveness. If additional reinforcement contingencies are administered at the same time there should be a similar or higher level of task attractiveness or task interest (Scott, 1976). It would seem that our results are in order with this explanation.

If we examine more carefully some of the studies reported by Deci and compare his findings with our results, it becomes quite apparent why the cognitive evaluation theory presents a parsimonious explanation of the data.

Deci's first study (1972a) consisted of four experimental conditions, a contingent pay condition, a contingent praise condition, a pay and praise condition and a control condition. Deci used praise as a form of task feedback, however he made no predictions concerning the effect of the treatment for pay and praise condition. For the remaining conditions he predicted that subjects in the contingent pay condition would work less on the task during the free time period (a behavioural measure for intrinsic motivation) than control subjects, while the subjects in the contingent praise condition would work more than the control subjects. The present study is more superior than Deci's work in that it manipulates a greater number of task variables and yet it offers no support to his hypotheses.

The next study by Deci (1972b) examined the effects of noncontingent monetary reward on intrinsic motivation. He hypothesised that there would be no significant differences between subjects who received noncontingent pay and subjects who received no pay with respect to the amount of time spent on the task during the free time period. Although, the present study used a behavioural measure of intrinsic motivation different from that used by Deci, the data also revealed no difference when analysed by a nonparametric test. However, these data should probably not be taken as support for the cognitive evaluation theory of Deci (1975) for three reasons. First, Deci's data was analysed using a parametric statistical test while this study used a nonparametric one. Second, the behavioural measure of intrinsic motivation are not the same. Deci actually observed the subjects working at the task during the free time period, while in our case it is not known how many subjects would have actually returned to the next session. The behavioural measure in the present investigation measured the volunteer rates and therefore are not comparable. And finally, our nonparametric result indicates that only the null hypothesis has been affirmed (see Calder and Staw, 1975a, for further discussion of this point).

An additional study (Vance, 1977), employing the general paradigm of Deci's studies (1972a, 1972b) was conducted to compare the effects of non-payment for task performance with both contingent and noncontingent payment. Similar to the previous research in this area (Calder and Staw, 1975a; Kruglanski, Friedman and Zeevi, 1971) the results indicated that noncontingent reward leads to a

lecrease in behaviour presumably determined by intrinsic motivation, relative to the non-payment condition. This research had the same purpose for the inclusion of a no pay condition in the experimental design. It was to allow the detrimental effect of reward, either contingent or noncontingent, on performance to clearly manifest itself. No such detrimental effects were found and the hypothesis that extrinsic reward decreases the level of performance-quality (which is presumably determined by intrinsic motivation) or increase the level of performance-quantity (presumably determined by extrinsic motivation) was clearly refuted.

In summary, the results of this study failed to support the cognitive evaluation theory regarding the effect of externally mediated rewards on intrinsic motivation. Instead they tend to support the assumptions made by reinforcement theorists. The data of the present investigation suggest several conclusions, albeit tentative ones, which may be drawn. The distinction between intrinsic and extrinsic motivation and reward appears to be a useful one. Intrinsic and extrinsic motivation, defined in terms of task content and task consequences, may represent distinct processes which can operate independently and simultaneously. Intrinsic and extrinsic rewards appear to have at least some differential effects. Increase in enrichedness yielded higher performance quality and quantity, while pay conditions were associated with higher performance quantity than the no pay condition. Both financial rewards and enriched task structure led to increases in task satisfaction, attributed intrinsic motivation and perceptions of intrinsic task characteristics.

4 INDIVIDUAL DIFFERENCES MODERATORS

Using correlational designs in field studies, researchers have reported few reliable and replicated examples of individual differences moderating task design and financial rewards (e.g., Friedlander, 1965; Hackman and Oldham, 1976; Wanous, 1974). Those variables which have received support from more than one study (e.g., higher order need strength) have received such support with the use of subgroup analysis, a technique receiving increasing criticism (Ganster, 1980). The few researchers who have used hierarchical regression to analyse their data (Stone, 1976; Stone et al., 1977) have discovered significant moderator effects. In the present study, two moderator variables were considered, task involvement and higher order need strength. The hierarchical regression analysis of our data produced nonsignificant results and thus did not support the predicted effects.

Deci, Casio and Krusell (1973) had predicted that contingent praise would enhance the intrinsic motivation for male subjects, but decreases the intrinsic motivation for females. The existence of sex differences prompted us to investigate whether there would be similar effects in our research with regards to age and sex. The results of the hierarchical regression analysis for sex and age showed that the existence of individual difference as moderator variables is less likely. An *ad hoc* test to further study the findings of Deci, Casio and Krusell that age and sex affected perceptions of extrinsic rewards which, in turn, influenced self-report measures and performance was conducted and a two variable path model was examined.

Although perceptions of task content was significantly related to age and sex, the relationship of pay contingency with the two individual differences moderators was found to be absent. It should be stressed that this analysis was post hoc and age and sex of the subjects were not equally distributed in the experimental conditions, therefore the results should be interpreted cautiously.

In sum, the search for moderator variables in task structure or financial rewards, as in the personnel selection literature, was disappointing.

CHAPTER 7

SUMMARY AND CONCLUSIONS

In this chapter the major findings of the research will be summarised and some of their implications will be discussed with respect to possible applications, models of human behaviour and methodology. Also some of the limitations of this research will be noted and some possibilities for future research will be indicated.

7.1 SUMMARY OF THE RESEARCH DESIGN AND THE MAJOR FINDINGS

The research was performed in a simulated organisation, which made possible a rigorous experiment in the sense that subjects could be assigned to experimental treatments according to plan, and identical task situations could be maintained in spite of the fact that some of the complexity and realism of a working organisation was retained. The experimental treatments involved two factors, task structure and financial rewards, arranged in a 2 x 4 design. One factor contrasted a task structure which was enriched on five task characteristics of variety, identity, significance, autonomy and feedback with a task that was unenriched on these five characteristics. The second factor contrasted four types of financial rewards or pay: no pay, noncontingent pay, contingent pay and variable amount-variable ratio (VA-VR) pay. These experimental conditions were presented in subtle and not-so-subtle ways in the background information about the simulated

organisation and the instructions read out to all the subjects. The perceptions of the task structures were kept alive, while subjects performed their duties, by including appropriate documents in the subjects' in-baskets.

The situational test that was the vehicle for the simulation required each subject to perform the paper work of an administrator, responding to documents in his or her in-basket as though he or she were actually on the job. Methods of scoring the resulting protocols were developed; they produced reasonably reliable scores on pilot testing. The dependent variable of performance-quality is based on these scores. Additional information about the subjects' attitudes and perceptions towards the task structure and financial reward were obtained by using a battery of questionnaires composed of the Job Diagnostic Survey, the Work and Life Attitudes Survey, a self-report on task attractiveness or interest, and a behavioural measure of intrinsic motivation.

The purpose of the study was to look for person-situation interactions in an examination of the effects of financial pay on the performance, satisfaction and perceptions of the subjects working on the enriched task, as opposed to subjects working on the unenriched task. More specifically the aim was to answer two general kinds of questions regarding task motivation: (1) What relationship exists between the two sets of motivational factors; intrinsic and extrinsic? (2) Are there differences between intrinsic and extrinsic motivation in terms of their effects upon performance (both quantity and quality), satisfaction and motivational attributions?

In an attempt to resolve these two problems, eight hypotheses based on the predictions of the cognitive evaluation

theory (Deci, 1975) were proposed and tested by the data derived from the study.

In considering the effects of the experimental treatments, we were concerned with three kinds of comparisons. One involved the *column* effects in our 2 x 4 design (see Figure 2) which involved a comparison of subjects in the enriched task with subjects in the unenriched task in regard to means of dependent variables. A second kind of comparison involved the *row* effects, or a comparison of subjects in the four different pay conditions in regard to the means. And the third involved the *interaction* of columns and rows, or a comparison of subjects in the task structure and financial reward combinations represented by the 2 x 4 table.

One statistical technique for comparing treatment groups with respect to task content, pay contingencies and a combination of the two was the discriminant analyses. From the results of these analyses, financial reward was found to have a facilitative, rather than a detrimental, effect upon intrinsic motivation.

Another procedure for comparing the treatment groups with respect to the means was the multivariate analysis of variance. The results offered no support for the interaction of intrinsic and extrinsic factors regarding performance, satisfaction, or task attributions. This provided evidence for the independence of task structure and financial reward. This contention was further supported by the pattern of univariate findings. The enriched task condition was associated with higher task satisfaction, higher performance quality and quantity, more attributed intrinsic motivation and higher extrinsic satisfaction when compared to the unenriched condition.

Contrasting the four levels of the pay factor suggested that the no pay condition and the noncontingent pay condition had generally a similar effect but, there was a general increase in performance, satisfaction and task attributions with pay contingency.

These findings indicated that the cognitive evaluation theory does not offer a complete description of the relationship between the contingency of extrinsic reward and intrinsic motivation. An alternative explanation for the enhancement effect of financial rewards was adopted using the reinforcement theory.

The data supported the notion that there is an incentive-motivational state which can be conditioned by organisational reinforcers which in turn influences individual's self-descriptions of the work environment and performance. This was especially highlighted by the data from the VA-VR pay condition subjects. This resulted in the speculation that an individual at a given time can reliably report an assortment of positive and negative attitudes regarding various work-related aspects. If this individual is reinforced with significant task reinforcers inherent in the task design over a period of time, a positive incentive-motivational state (PIMS) will become conditioned to that setting, and will be evoked by various stimulus configurations. The PIMS will possibly result in selective attention to organisational stimuli, most of which the individual will perceive either as positive reinforcers or discriminative cues. This individual is then likely to report significantly more positive attitudes regarding the various work-related aspects depending on the discriminative cues.

7.2 IMPLICATIONS FOR PERSONNEL PRACTICE

Any inclination to put into immediate practice personnel procedures that appear to be desirable on the basis of findings reported here would be premature as the study is based on performance in a simulated job. There is no denying the likelihood that to some degree subjects will perform differently in a situational test than they do in a real job, knowing as they do that decisions and outcomes are not "for real" and that no one's career would really be influenced by any action taken. The reason for carrying out a simulation exercise, was to make possible a more rigorous study, through being able to assign subjects to treatments and to control conditions more completely. The penalty that must be paid is the doubt about the external validity, that is about the generality of the findings. We shall have more to say on this point in a later section. Having stated this *caveat*, we will nevertheless proceed to consider some of the implications of the study.

Organisations may have more complex reward structures and more complex problems than our simulation but they are similar to this experimental design in the sense that they have both monetary and task rewards. If the results can be generalised, they could have interesting implications. They support the contention that performance and satisfaction are a function of various job characteristics and the reward systems (which will vary with whatever the rewards are contingent upon) will help to enhance them. Thus managers need to know not only that performance and satisfaction are low, but who is dissatisfied, why and what their likely responses will be.

The results also imply that turnover and participation are rather complex in nature. Managers cannot assume that people are leaving because they are dissatisfied with either their jobs or their pay. The rate of subjects who did not volunteer for the unscheduled, nonrewarded session indicated that managers must know what type of performers these people were and why they chose the withdrawal option. Presumably, there are some low performers that the organisation would be very happy to lose and some high performers whose choice to leave would raise some real questions about the management system.

If the results of this laboratory study are supported by future investigations, it would mean that managers should attempt to design a work setting that is both intrinsically motivating and extrinsically rewarding. The more obvious recommendation is that in order to increase the level of performance of administrative staff, the conditions of the job structure should be enriched and pay should be contingent upon performance or based on a variable schedule of reinforcement.

7.3 IMPLICATIONS FOR A MODEL OF HUMAN BEHAVIOUR

The first and simplest statement of a model of human behaviour is no doubt the S → R formulation, which implies that the organism responds predictably to a given stimulus. The fact of individual variations in response to a stimulus, such as those related to age, sex, or amount of training, was of course known, and such variation was recognised by Woodworth (1934), for example, when in the third edition of his book he inserted an O (for *organism*) to produce the more adequate

formulation S → O → R. The more recent development of mathematical models has ordinarily been based on either the S or the O but not on both together. The regression formula which has been used in the present research, predicts behaviour only from the O or individual difference variables, and the mathematical models for predicting learning, for example, make use of S variables but use O variables only in a very general way or not at all.

The concept of differential predictability and the use of moderator variables in the prediction formula of the personnel psychologist recognise a greater degree of complexity. The notion is that the predictive value of one variable may be influenced by another factor, the moderator variable. For example, in the present study, the values of the dependent measures for predicting performance, satisfaction, and task attributions, were thought to be moderated by the sex of the subject, the age of the participant, and the levels of task involvement and higher order need strength. While the results indicated that the variables do not have a moderating effect on the responses, most studies of moderator variables have employed similar measures of individual differences as moderators. Perhaps future research should consider the situational variable as a possible moderator. The use of situations as moderators of predictions based on personal characteristics permits us to write a type of regression formula (Saunders, 1955) that recognises one kind of interaction between situational and personal variables. Better still might be a complete curvilinear model which considers the cross products and squares of a set of predictors, including both personal and situational variables.

Important interactions of situational and personal variables are suggested by the results of the discriminant analyses in this study. There is another aspect of the study which leads us to believe that a complex mode, similar to that described above, is needed. It is related to the significant differences found among the moderator variables and the task structure experimental treatments. Situational variables (such as organisational structure) may not only influence the dependent variables, but may also influence the *interrelationships* of a number of other variables. Perhaps this may account for the high within-groups inter-correlations in the present research. Thus our model of human behaviour should be one that can consider a variety of relevant criterion variables simultaneously and consider effects on variability and intercorrelations of the dependent variables.

Most theories of organisational behaviour place great stress on the importance of interactions. Schein (1978), for example, speaks of organisation as a system with multiple purposes and functions, which involve multiple interactions with the environment and with many sub-systems that are in dynamic interactions. Further research in this area would provide some valuable information about moderator variables.

7.4 METHODOLOGICAL IMPLICATIONS

The chief methodological innovation in this study is the simulation of an organisation as the vehicle for a social-psychological experiment. However, every experiment involves some degree of simulation in the sense that some aspect of the environment is abstracted and an attempt is made to bring it under laboratory control. In this experiment, a complex

organisation was simulated and controlled, while certain aspects of the organisation were systematically varied and the influences on performance, satisfaction and motivational attributions observed. In a more typical laboratory experiment, the aspects of the environment that are specifically brought under control are much more limited; for example, the background conditions of illumination and noise might be controlled while experimental variations in pitch of sound or a number of dots on a screen are introduced. In the case of either kind of experiment, we have the problem of generalising to other situations. What are the advantages or disadvantages of the complex simulation from the point of view of generalisation of results to other situations, including real-life settings?

In the case of many laboratory experiments the question does not seem to arise, possibly because it is taken for granted that the results will hold under a variety of conditions, or perhaps because the laboratory findings are of scientific interest whether or not they may be generalised. Why does the problem seem to be more serious in the case of the simulation of an organisation? The answer may be that the simulation of the organisation necessarily makes specific a good many details, any one of which could conceivably influence the outcome of the experiment. In the laboratory experiment, fewer attributes of the environment are specifically brought under control; therefore there is less reason to suspect that the findings are specific to a given set of background conditions.

This question of generality is the problem of external validity (Campbell and Stanley, 1966). Bracht and Glass (1968)

provide a good outline for an evaluation of the external validity of experiments based on simulations of an organisation.

They suggest that questions about external validity are of two main classes: (1) *population validity* (What population can be expected to behave like the experimental subjects?) and (2) *ecological validity* (In what settings or under what conditions can we expect people to behave like the experimental subjects?)

7.4.1 Population Validity

Strictly speaking one can generalise from an experiment only to that population from which the experimenter has drawn his or her sample, and then only if the sample has been drawn randomly. It is, however, rarely possible to draw a truly random sample of human subjects for participation in an experiment, and one can therefore rigorously generalise only to something Bracht and Glass call the "experimentally accessible" population. Membership in this accessible population is restricted by a large number of considerations such as willingness to serve as subject and freedom to participate at a particular time and place. We do not usually know what differentiates the accessible population from the target population that we would like to sample. Since we can rigorously generalise an experimental finding only to the accessible population and not to the target population we are usually in the awkward position of not even knowing accurately the nature of the population to which we can generalise.

Any psychological research with human subjects is likely to involve this problem of the accessible population,

although it is perhaps less serious in certain educational or clinical investigations where the target population might be "captive", such as all school leavers in the public school system of a certain city. The problem may be more serious when the target population is composed of adult subjects who are relatively free from administrative control and who may have many conflicting demands on their time, as was the case for subjects in the present study.

In the study reported here, our target population was all those students enrolled at the University of Canterbury (see Chapter 4). Gross indicators, such as faculties in which the subjects were enrolled in, are shown in Chapter 4, but we can only guess as to the personal considerations that entered into the many decisions concerning participation. Hence, generalisation of research findings to all students in the University of Canterbury is risky, to say nothing of generalisation to all university students or to administrators in profit-making organisations. One would hope that in general outline, the findings would apply quite broadly; but one must await the completion of other similar research projects before we know the limitations in population validity.

7.4.2 Ecological Validity

The preceding discussion has to do with limitations in generality attributed solely to the selection of subjects. Ecological validity has to do with limitations attributable to the environment, that is, to the situation in which the experiment was conducted. In this instance, we will be particularly concerned about the fact that the data were obtained in a simulated job in a simulated organisation, using

simulated organisational structures. To what extent is one justified in generalising from data obtained in such a setting to performance in other settings, especially real-life jobs?

The first consideration discussed by Bracht and Glass has to do with the need to specify accurately the set of operations involved in the experiment. They were interested primarily in educational research, where there is often difficulty in specifying exactly what an experimental treatment is. If, for example, the "discovery" method is used as an experimental teaching method, the operations involved in teaching by that method should be specified so clearly and completely that another investigator could repeat the study with a high degree of fidelity. From this point of view, simulations such as that employed in our study rate well, since it is possible to replicate the materials used with a high degree of accuracy and completeness, using apparatus no more complicated than a photostat machine and a tape recorder. A more important question, however, has to do with generalisation to real-life work situations.

Another consideration discussed by Bracht and Glass is the effect on behaviour of the subject's knowledge that he or she is participating in an experiment. Under this heading they discuss the possibility that anxiety will be generated by the experience, that subjects will exhibit "social desirability" bias, and that subjects will behave in accordance with what they perceive to be the experimenter's hypotheses or in accordance with their own "lay theory" about behaviour in the experimental setting as they perceive it.

With regard to anxiety, subjects in our experiment were given assurances that there would be complete anonymity in reporting data. These statements no doubt reduced anxiety, but we would not expect to completely eliminate anxiety by such means. In fact we would not want to, since a real job is anxiety-generating, probably to an even greater degree than the simulated task; the anxiety presumably adds to the realism of the situation.

Social desirability bias is usually interpreted as a tendency for a person responding to a questionnaire or personality inventory to choose responses that tend to put him or her in a good light. We should no doubt assume that subjects in the situational test did try to put themselves in a good light, just as candidates do in any situation in which they expect their work to be critically examined. The only factor which could not have been effected by this bias is the performance measures. The subject taking an in-basket test cannot anticipate the *specific* ways in which his or her protocol will be scored.

Similarly, one would not expect that lay theories of organisational behaviour or subjects' perceptions of the hypotheses being tested would influence subjects' behaviour in a systematic way. The stimulus materials do not suggest that any particular behaviours are of interest, the task is unstructured, and the dependent variables are numerous and varied.

A third source of ecological validity discussed by Bracht and Glass is the effects of novelty and disruption. These effects would presumably be applicable to this research. Although our data were obtained in the regular environment of

the subjects (that is, the university campus), there was certainly disruption of their regular work routines because the simulated job bore no similarity to their usual activities. The experimental situation was novel, but the actual simulation of the organisation and of the paper work was made as realistic as possible. Perhaps the effects of the simulated conditions might have changed with time as subjects either adapted to them or became increasingly sensitive to them. Such questions can only be answered if the experiment were continued for a longer period of time.

We shall not discuss in detail all of the factors described by Bracht and Glass that might limit ecological validity, since the general nature of the problem has been sufficiently indicated above. Other factors they considered are multiple-treatment interference (where two or more treatments are administered consecutively to the same subjects), experimenter effects (the experimenter may unintentionally influence the behaviours of subjects), interaction treatments with events occurring simultaneously in the world or local community, choice of method for measuring the dependent variable, and interaction of treatment effects with time of measurement.

The question of generality will ultimately be settled by more studies, both experimental and in field settings. The feasibility of doing social-psychological experiments in simulated settings appears to have been confirmed by this experiment. The variations in settings, experimental treatments and dependent variables that might be employed are limited only by the experimenter's imagination. The use of complex situational test as a device for performing experiments

in the behavioural sciences obviously has advantages over field studies from the standpoint of experimental controls, and could be used more extensively as an investigative technique.

7.5 LIMITATIONS OF THE STUDY AND POSSIBLE FUTURE RESEARCH DIRECTION

The general limitations to this research have been described in the previous sections of this chapter. In this section several specific limitations to the research will be noted which may have resulted in the lack of agreement between this study and those of the proponents of the cognitive evaluation theory (e.g., Deci).

The first limitation to the results of this study relates to the task. There were task differences between the two lines of research. The critical dimension along which differences would be important is task interest. Deci (1972b) has argued that a task must be high in task interest before contingent pay will reduce intrinsic task motivation. Although our results indicated that all the subjects found the task as attractive and interesting, it seems unlikely that the Soma puzzle employed by Deci in most of his work was more interesting than the in-basket exercise. It should be noted that Deci presented no empirical evidence regarding task interest. Perhaps future researchers should replicate Deci's original experiments and employ a methodology which assesses the process. Also, we suggest that researchers obtain task characteristics information so that boundary conditions concerning additive/nonadditive effects may be delineated. Clearly, more research is needed in naturally occurring working environments.

Operational and situational differences in the assessment of intrinsic motivation also could have contributed to the observed differences. Deci has generally used an experimental procedure which, after a period of task performance, places the subject in the position of waiting for the experimenter to return with a questionnaire for the subject to complete. During this waiting period the subject is free to do as he or she pleases (work on the task puzzle, read a magazine which is available, simply sit there, etc.) so long as the individual remains in the experimental room. Intrinsic task motivation is measured by the amount of time the subject works on the task during this period. In the present study, intrinsic motivation was measured by whether the subject volunteered for an unscheduled, nonrewarded task session. Caution is required in interpreting the absolute magnitude of the rate of volunteering as an index of intrinsic motivation. This index does not examine the relationship between volunteering and actual return behaviour. Furthermore, we have no evidence of performance during this session. According to Deci (1972a), performance during such a nonrewarded session is a method to tap the construct of intrinsic motivation. The question of the nature of relationships among pay contingencies, intrinsic motivation and subject choice should be explored in future research.

The small sample size in each experimental group ($n = 10$) and the use of a factorial research design is another limitation to this investigation. Perhaps future researchers should design studies using cross-sectional or split-plot designs for a larger sample of subjects.

Questions can be raised concerning the nature of the pay system in the present study. Of importance is the absence of a measure to effectively check whether pay manipulations had in fact taken place as designed. We cannot prove that the subjects did actually perceive the different types of pay contingencies which were employed.

A further point of departure between the present study and the typical study conducted by Deci concerns the pay level. Deci has generally used relatively high levels of pay by the standards of present students in New Zealand (e.g., the opportunity to earn more than U.S.$5.00 for about an hour's task performance), whereas in the present study subjects earned N.Z.$3.00 for about the same period. The magnitude of pay in the Deci studies may have been perceived as greater than expected by the university students who were the subjects. The level of pay used in the present study was more typical of pay for part-time jobs which the subjects may have experienced. Empirical research is needed to investigate the relationship between decreased intrinsic motivation and level or magnitude of contingent pay.

In addition to lack of behavioural support for the arguments of Deci (1975), no support was found for the attributional process also hypothesised by him as the psychological mechanism causing the decrease in observed intrinsic motivation. While it certainly could be argued that, since no behavioural measures of intrinsic motivation were affected by the pay contingencies, one would not expect attributional effects to be found. It should be pointed out that other research has also failed to support this mechanism (Salancik, 1975; Staw, 1974). The need for another mechanism to account for such data seems apparent.

The positive effect of the enriched task upon attitudinal and perceptual variables further strengthens the arguments of Hackman and Lawler (1971) regarding the importance of designing jobs to be high on the core dimensions. In particular, the increased internal attributions to the causes of task satisfaction and motivation in the enriched task indicated the positive impact of the core dimensions upon the intrinsic motivation of the subjects. These data suggest that it may still be important to consider motivation and satisfaction attributions as psychological mechanisms affecting work behaviour. The effect of task characteristics upon these causal attributions suggest that it may be fruitful in future investigations to test more explicitly the hypothesis that such attributions serve to translate task perceptions into overt behaviours.

Finally, there was little effect of the moderator variables in this research. Perhaps the relatively brief performance period and the subjective nature of performance in this task may have inhibited the moderating effects of task involvement and higher order need strength.

In conclusion, it would seem that a fruitful area for research would be the investigation of objective task characteristics. Specifically, if separate task dimension can be manipulated orthogonally, both their main and interactive effects on subjects' responses can be assessed. Such a research strategy would also be useful in determining how different task stimuli become salient to an individual at a particular point in time, and how individuals combine different stimuli (such as task and pay) to form both perceptual judgements and affective and behavioural reactions to tasks.

REFERENCES

(WITH SELECTIVE BIBLIOGRAPHY)

ADAMS, J.S. Inequity in social exchange. In L. Berkowitz (Ed.), Advances in Experimental Social Psychology, Vol.2, New York: Academic Press, 1965.

ALDAG, R.J., & BRIEF, A.P. Task design and employee motivation. Glenview, Ill.: Scott, Foresman, 1979(a).

ALDAG, R.J., & BRIEF, A.P. Examination of a measure of higher-order need strength. Human Relations, 1979(b), 8, 705-718.

ALDAG, R.J., BARR, S.H., & BRIEF, A.P. Measurement of perceived task characteristics. Psychological Bulletin, 1981, 90, 415-431.

ALDERFER, C.P. Existence, relatedness, and growth: Human needs in organizational settings. New York: Free Press, 1972.

ARGYAL, A. Foundations for a Science of Personality. New York: Commonwealth Fund, 1941.

ARNOLD, HUGH J. Effects of performance feedback and extrinsic reward upon high intrinsic motivation. Organizational Behavior and Human Performance, 1976, 17, 275-288.

ARONSON, E. The Psychology of insufficient justification: An analysis of some conflicting data. In S. Feldman (Ed.), Cognitive Consistency: Motivational Antecedents and Behavior Consequences. New York: Academic Press, 1966.

ARONSON, E., & CARLSMITH, J.M. Experimentation in social psychology. In G. Lindzey and E. Aronson (Eds.), The Handbook of Social Psychology, Vol.2. Reading, Mass.: Addison-Wesley, 1969.

ATKINSON, J.W. An introduction to motivation. Princeton, N.J.: Van Nostand, 1964.

ATKINSON, J.W. & FEATHER, N.T. A theory of achievement motivation. New York: John Wiley & Sons, 1966.

BEHLING, O., SCHRIESHEIM, C., & TOLLIVER, J. Alternatives to expectancy theories for work motivation. Decision Sciences, 1975, 6, 449-61.

BEM, D.J. Self-perception theory. In L. Berkowitz (Ed.), Advances in Experimental Social Psychology, Vol.6, New York: Academic Press, 1972.

BENWARE, C., & DECI, E.L. Attitude change as a function of the inducement for espousing a pro-attitudinal communication. Journal of Experimental Social Psychology, 1975, 11, 271-278.

BERGER, CHRIS J., CUMMINGS, L.L., & HENEMAN, HERBERT G. Expectancy theory and operant conditioning predictions of performance under variable ratio and continuous schedules of reinforcement. Organizational Behavior and Human Performance, 1975, 14, 227-243.

BERLYNE, D.E. Conflicts, arousal and curiosity. McGraw-Hill, 1960.

BERLYNE, D.E. Exploration and curiosity. Science, 1966, 153, 25-33.

BERLYNE, D.E. What next? Concluding summary. In H.I. Day, D.E. Berlyne & D.E. Hunt (Eds.), Intrinsic motivation: A new direction in education, Toronto: Holt, 1971.

BERLYNE, D.E. Curiosity and learning. Motivation and Emotion, 1978, 2, 97-175.

BEXTON, W.H., HERON, W., & SCOTT, T.H. Effects of decreased variation in the sensory environment. Canadian Journal of Psychology, 1954, 8, 70-76.

BINDRA, D. Neoropsychological interpretation of the effects of drive and incentive - motivation on general activity and instrumental behavior. Psychological Review, 1968, 75, 1-22.

BLOOD, M.R. Intergroup comparisons of intraperson differences: Rewards from the job. Personnel Psychology, 1973, 26, 1-9.

BRACHT, G.H., & GLASS, G.V. The external validity of experiments. American Educational Research Journal, 1968, 5, 437-474.

BRIEF, A.P., & ALDAG, R.J. The intrinsic-extrinsic dichotomy: Toward conceptual clarity. Academy of Management Review, 1977, 2, 496-500.

BRIEF, A.P. & ALDAG, R.J. Employee reactions to job characteristics: A constructive replication. Journal of Applied Psychology, 1975, 60, 182-186.

BROEDLING, L.A. The use of an intrinsic index of motivation in an expectancy theory framework. Paper presented at the Western Division of the Academy of Management, 1975.

BROEDLING, L.A. The uses of the intrinsic-extrinsic distinction in explaining motivation and organizational behavior. Academy of Management Review, 1976, 2, 267-274.

CALDER, B.J., & STAW, B .M. Interaction of intrinsic and extrinsic motivation: Some methodological notes. Journal of Personality and Social Psychology, 1975(a), 31, 76-80.

CALDER, B.J., & STAW, B.M. The self-perception of intrinsic and extrinsic motivation. Journal of Personality & Social Psychology, 1975(b), 31, 599-605.

CAMPBELL, J.P. On the nature of organizational effectiveness. In P.S. Goodman, J.M. Pennings & Associates (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1971, 13-15.

CAMPBELL, D.T., & STANLEY, J.C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally, 1966.

CAMPBELL, J.P., DUNNETTE, M.D., LAWLER, E.E., & WEICK, K.E. Managerial Behavior, Performance and Effectiveness. New York: McGraw-Hill, 1970.

CASCIO, W.F. Value Orientation, Organizational Rewards and Job Satisfaction, Technical Report 82. Rochester, N.Y.: Graduate School of Management, University of Rochester, 1973.

CHERRINGTON, D.J. The effects of a central incentive-motivational state on measures of job satisfaction. Organizational Behavior and Human Performance, 1973, 10, 271-289.

CHERRINGTON, D.J., REITZ, H.J., & SCOTT, W.E. Effects of reward and contingent reinforcement on satisfaction and task performance. Journal of Applied Psychology, 1971, 55, 531-536.

CONDRY, J.C. Enemies of exploration: Self-initiated versus other-initiated learning. Journal of Personality and Social Psychology, 1977, 35, 459-477.

deCHARMS, R. Personal Causation: The internal affective determinants of behavior. New York: Academic Press, 1968.

deCHARMS, R. Enhancing motivation: Change in the classroom. New York: Irvington, 1976.

DACHLER, H.P., & MOBLEY, W.H. Construct validation of an instrumentality-expectancy-task goal model of work motivation and performance in two organizations: Implication of theoretical boundary conditions for research and practice. Work paper No.PS-712, University of Maryland, November, 1972.

DAKIN, S.R. Personal Communication, 1983.

DECI, E.L. Effects of externally mediated rewards on intrinsic motivation. Journal of Personality and Social Psychology, 1971, 18, 105-115.

DECI, E.L. Effects of contingent and noncontingent rewards and controls on intrinsic motivation. Organizational Behavior and Human Performance, 1972(a), 8, 217-229.

DECI, E.L. Intrinsic motivation, extrinsic reinforcement and inequity. Journal of Personality and Social Psychology, 1972(b), 22, 113-120.

DECI, E.L. Intrinsic Motivation. New York: Plenum, 1975.

DECI, E.L. The hidden costs of rewards. Organizational Dynamics, 1976(a), 4, 61-72.

DECI, E.L. Notes on the theory and meta-theory of intrinsic motivation. Organizational Behavior and Human Performance, 1976(b), 15, 130-145.

DECI, E.L. The psychology of self-determination. Lexington, Mass.: Heath, Lexington Books, 1980.

DECI, E.L., & CASCIO, W.F. Changes in intrinsic motivation as a function of negative feedback and threats. Paper presented at the meeting of the Eastern Psychological Association, Boston, April, 1972.

DECI, E.L., & PORAC, J.F. Cognitive evaluation theory and the study of human motivation. In M.R. Lepper & D.Greene (Eds.), The hidden costs of reward. Hillsdale, N.J.: Erlbaum, 1978, 149-176.

DECI, E.L., & RYAN, M. The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), Advances in experimental social psychology, Vol.13, New York: Academic Press, 1980, 39-80.

DECI, E.L., BENWARE, C., & LANDY, D.A. The attribution of motivation as a function of output and rewards. Journal of Personality, 1974, 42, 652-667.

DECI, E.L., CASCIO, W.F., & KRUSELL, J. Sex differences, positive feedback and intrinsic motivation. Paper presented at the meeting of the Eastern Psychological Association, Washington, D.C., May, 1973.

DECI, E.L., CASCIO, W.F. & KRUSELL, J. Cognitive evaluation theory and some comments on the Calder-Staw critique. Journal of Personality and Social Psychology, 1975, 31, 81-85.

DECI, E.L., NEZLEK, J., & STEINMAN, L. Characteristics of the rewarder and the rewardee. Journal of Personality and Social Psychology, 1981, 40, 1-10.

DECI, E.L., PORAC, J., & SHAPIRA, L. Effects of rewards on interest and intrinsic motivation for an extrinsic activity. Unpublished manuscript, University of Rochester, 1978.

DECI, E.L., BETLEY, G., KAHLE, J., ABRAMS, L., & PORAC, J. When trying to win: Competition and intrinsic motivation. Personality and Social Psychology Bulletin, 1981, 7, 79-83.

DERMER, J. The interrelationship of intrinsic and extrinsic motivation. Academy of Management Journal, 1975, 18, 125-129.

DYER, L., & PARKER, D.F. Classifying outcomes in work motivation research: An examination of the intrinsic-extrinsic dichotomy. Journal of Applied Psychology, 1975, 60, 455-458.

EDWARDS, W. The predictions of decision among bets. Journal of Experimental Psychology, 1955, 50, 201-214.

EVANS, M.G., KIGGUNDU, M.N., & HOUSE, R.J. A partial test and extension of the job characteristics model of motivation. Organizational Behavior and Human Performance, 1979, 24, 354-381.

FARR, J.L. Task characteristics, reward contingency, and intrinsic motivation. Organizational Behavior and Human Performance, 1976, 16, 294-307.

FARR, J.L., VANCE, R.J., & McINTYRE, R.M. Further examinations of the relationship between reward contingency and intrinsic motivation. Organizational Behavior and Human Performance, 1977, 20, 31-53.

FEINGOLD, B.D., & MAHONEY, M.J. Reinforcement effects of intrinsic interest: Undermining the overjustification hypothesis. Behavior Therapy, 1975, 6, 367-377.

FISHER, C.D. The effects of personal control, competence and extrinsic reward systems on intrinsic motivation. Organizational Behavior and Human Performance, 1978, 21, 273-287.

FREDERIKSEN, N., JENSEN, O., & BEATON, A.E. Prediction of Organizational Behavior. New York: Pergamon Press, 1972.

GALBRAITH, J., & CUMMINGS, L.L. An empirical investigation of the motivational determinants of task performance: Interactive effects between instrumentality-valence and motivation-ability. Organizational Behavior and Human Performance, 1967, 2, 237-257.

GHISELLI, E.E. Explorations in managerial talent. Pacific Palisades, Calif.: Goodyear, 1971.

GREENE, C.N. Causal connections among managers' merit pay, job satisfaction and performance. Journal of Applied Psychology, 1974, 58, 95-100.

GREENE, D., & LEPPER, M.R. Effects of extrinsic rewards on children's subsequent intrinsic interest. Child Development, 1974, 45, 1141-1145.

GREENE, D., & LEPPER, M.R. An information-processing approach to intrinsic and extrinsic motivation. Paper presented at the American Psychological Association Convention, 1975.

GREENE, D., STERNBERG, B., & LEPPER, M.R. Overjustification in a token economy. Journal of Personality and Social Psychology, 1976, 34, 1219-1234.

GRIFFIN, R.W. Perceived task characteristics and employee productivity and satisfaction. Human Relations, 1982, 35, 927-938.

GUZZO, R.A. Types of rewards, cognitions, and work motivation. Academy of Management Review, 1979, 41, 75-86.

HACKMAN, J.R., & LAWLER, E.E. Employee reactions to job characteristics. Journal of Applied Psychology Monograph, 1971, 55, 259-285.

HACKMAN, J.R., & OLDHAM, G.R. The job diagnostic survey: An instrument for the diagnosis of jobs and the evaluations of job redesign projects (Tech.Rep.No.4). New Haven, Conn.: Yale University, Department of Administrative Sciences, 1974.

HACKMAN, J.R., & OLDHAM, G.R. Development of the job diagnostic survey. Journal of Applied Psychology, 1975, 60, 159-170.

HACKMAN, J.R., & OLDHAM, G.R. Motivation through the design of work: Test of a theory. Organizational Behaviour and Human Performance, 1976, 16, 250-279.

HACKMAN, J.R., & OLDHAM, G.R. Work redesign. Reading, Mass: Addison-Wesley, 1980.

HAMNER, W.C., & FOSTER, L.W. Are intrinsic and extrinsic rewards additive: A test of Deci's cognitive evaluation theory of task motivation. Organizational Behavior and Human Performance, 1975, 14, 398-415.

HARLOW, H.F. Learning and satiation of response in intrinsically motivated complex puzzle performance by monkeys. Journal of Comparative and Physiological Psychology, 1950, 40, 228-234.

HARLOW, H.F., & McCLEARN, G.E. Object discrimination learned by monkeys on the basis of manipulation motives. Journal of Comparative and Physiological Psychology, 1954, 47, 73-76.

HARLOW, H.F., HARLOW, M.K., & MEYER, D.R. Learning motivated by a manipulation drive. Journal of Experimental Psychology, 1950, 40, 228-234.

HEIDER, F. The psychology of interpersonal relations. New York: Wiley, 1958.

HERZBERG, F., MAUSNER, B., & SNYDERMAN, B. The Motivation to Work. New York: Wiley, 1959.

HOUSE, R.J. A path-goal theory of reader effectiveness. Administrative Science Quarterly, 1971, 16, 321-338.

HOUSE, R.J., & WAHBA, M.A. Expectancy theory as a predictor of job satisfaction, performance and motivation: A model and review of literature. In Tosi, Dunnette & House (Eds.), Managerial motivation and compensation. Michigan State University, 1972.

HOUSE, R.J., SHAPIRO, H.J., & WAHBA, M.A.Expectancy theory as a predictor of work behaviour and attitude: A reevaluation of empirical evidence. Decision Sciences, January, 1974.

HUGHES, R.L. "Object" evaluation: A reinterpretation of affect conditioning in the reinforcement model of attraction. In D. Bryne, The Attraction Paradigm, New York: Academic Press, 1971.

HULIN, C.L., & BLOOD, M.R. Job enlargement, individual differences, and worker responses. Psychological Bulletin, 1968, 60, 41-55.

HULL, C.L. Principles of Behavior. Appleton-Century-Crofts, 1943.

HUNT, J.V. Intrinsic motivation and its role in psychological development. In D.Levine (Ed.), Nebraska Symposium on Motivation, Vol.13. Lincoln: University of Nebraska Press, 1965.

JABLONSKY, S.F., & DeVRIES, D.L. Operant conditioning principles extrapolated to the theory of management. Organizational Behavior and Human Performance, 1972, 7, 340-358.

JONES, W.D., & MAWHINNEY, T.C. The interaction of extrinsic rewards and intrinsic motivation: A review and suggestions for future research. Proceedings of the 37th Annual Convention of the Academy of Management, 1977, 62-65 .

KELLY, H.H. Attribution theory in social psychology. In D.Levine (Ed.), Nebraska Symposium on Motivation, Vol.15. University of Nebrasks Press, 1967.

KELLY, H.H. Attribution in social interaction. Morristown, N.J.: General Learning Press, 1971.

KIRK, R. Experimental design: Procedures for the behavioral sciences. Belmont, CA: Brooks/Cole, 1968.

KOCH, S. Behaviour as 'intrinsically' regulated: Work notes towards a pretheory of phenomena called motivation. In M.R. Jones (Ed.), Nebraska Symposium on Motivation. Lincoln: University of Nebraska Press, 1956.

KRUNGLANSKI, A.W. The endogenous-exogenous partition in attribution theory. Psychological Review, 1975, 82, 387-406.

KRUGLANSKI, A.W., ALON, S., & LEWIS, T. Retrospective misattribution and task employment. Journal of Experimental and Social Psychology, 1972, 8, 493-501.

KRUGLANSKI, A.W., FRIEDMAN, I., & ZEEVI, G. The effects of extrinsic incentive on some qualitative aspects of task performance. Journal of Personality, 1971, 39, 606-617.

KRUGLANSKI, A.W., RITER, A., AMITAI, A., MARGOLIN, B., SHABTAI, L., & ZAKSH, D. Can money enhance intrinsic motivation?: A test of the content-consequence hypothesis. Journal of Personality and Social Psychology, 1975(b), 31, 744-750.

KRUGLANSKI, A.W., RITER, A., ARAZI, A., AGASSI, R., MONTEQUO, J., PERI, I., & PERETZ, M. Effects of task-intrinsic rewards upon extrinsic and intrinsic motivation. Journal of Personality and Social Psychology, 1975(a), 31, 699-705.

LAWLER, E.E. Ability as a moderator of the relationship between job attitudes and job performance. Personal Psychology, 1966, 19, 153-164.

LAWLER, E.E. Job design and employee motivation. Personnel Psychology, 1969, 22, 426-435.

LAWLER, E.E. Pay and Organizational Effectiveness: A psychological perspective. New York: John Wiley & Sons, 1971.

LAWLER, E.E. Motivation in work organizations. Belmont, Calif: Brooks/Cole, 1973.

LAWLER, E.E. Adaptive experiments: An approach to organizational behavior research. Academy of Management Review, 1977, 2, 576-585.

LAWLER, E.E. & PORTER, L.W. Antecedent attitudes of effective managerial performance. Organizational Behavior and Human Performance, 1967, 2, 122-242.

LAWLER, E.E., HACKMAN, J.R., & KAUFMAN, S. Effects of job design: A field experiment. Journal of Applied Social Psychology, 1973, 3, 49-62.

LEPPER, M.R. Dissonance, self-perception and honesty in children. Journal of Personality and Social Psychology, 1973, 25, 65-74.

LEPPER, M.R., & GREENE, D. Turning play into work: Effects of adult surveillance and extrinsic rewards on children's intrinsic motivation. Journal of Personality and Social Psychology, 1975, 31, 479-486.

LEPPER, M.R., & GREENE, D. On understanding "overjustification" A reply to Reiss and Sushinsky. Journal of Personality and Social Psychology, 1976, 33, 25-35.

LEPPER, M.R., GREENE, D., & NISBETT, R.E. Undermining children's intrinsic interest with extrinsic rewards: A test of the "overjustification" hypothesis. Journal of Personality and Social Psychology, 1973, 28, 129-137.

LEWIN, K. A dynamic theory of personality. New York: McGraw-Hill, 1935.

LEWIN, K. The Conceptual Representation and the Measurement of Psychological Forces. Durham, N.C.: Duke University Press, 1938.

LEWIN, K., DEMBO, T., FESTINGER, L., & SEARS,P.W. Level of aspiration. In J.McV. Hunt (Ed.), Personality and behaviour disorders, Vol.1, Ronald Press, 1944.

LITWIN, G.H. Motives and expectancies as determinants of preference for degrees of risk. In J.W. Atkinson & N.T. Feather (Eds.), A theory of achievement motivation. New York: Wiley, 1966.

LOPEZ, E.M. A test of Deci's cognitive evaluation theory in an organizational setting. Paper presented at the 39th Annual Convention of the Academy of Management, August 1979.

LUTHANS, F., MARTINKO, M., & KESS, T. An analysis of the impact of contingent monetary rewards on intrinsic motivation. Proceedings of the 19th Annual Meeting of the Midwest Academy of Management, 1976.

MASLOW, A.H. A theory of human motivation. Psychological Review, 1943, 50, 370-396.

MASLOW, A.H. Motivation and personality. 2nd ed., New York: Harper, 1970.

MAWHINNEY, T.R. Intrinsic x Extrinsic work motivation: Perspectives from behaviorism. Organizational Behavior and Human Performance, 1979, 24, 411-440.

MAWHINNEY, T.R., & BEHLING, O. Differences in predictors of work behaviour from expectancy and operant models of individual motivation. Academy of Management Proceedings, 33rd Annual Meeting, 1973, 383-389.

MITCHELL, T.R. Expectancy models of job satisfaction, occupational preference and effort: A theoretical, methodological and empirical appraisal. Psychological Bulletin, 1974, 81, 1096-1112.

MITCHELL, T.R. Organizational behavior. In Rosenzwig & Porter (Eds.), Annual Review of Psychology, 1979, 30, 243-281.

MITCHELL, T.R., & ALBRIGHT, D.W. Expectancy theory predictions of the satisfaction, effort, performance and retention of Naval Aviation Officers. Organizational Behavior and Human Performance, 1972, 8, 1-20.

MONTGOMERY, D.C.The role of exploratory drive in learning. Journal of Comparative Physiological Psychology, 1954, 47, 60-64.

PINDER, C.C. Concerning the application of human motivation theories in organizational settings. Academy of Management Review, 1977, 2, 384-397.

PINDER, C.C. Additivity versus nonadditivity in intrinsic and extrinsic incentives: Implications for work motivation, performance and attitudes. Journal of Applied Psychology, 1976, 61, 693-700.

PORTER, L.W., & LAWLER, E.E. Managerial attitudes and performance. Homewood, Ill.: Irwin Dolsey Press, 1968.

PORTER, L.W., & LAWLER, E.E. The effect of performance and job satisfaction. Industrial Relations, 1967, 7, 20-28.

PRITCHARD, R.D., & PETERS, L.H. Job duties and job interests as predictors of intrinsic and extrinsic satisfaction. Organizational Behavior and Human Performance, 1974, 12, 315-330.

PRITCHARD, R., CAMPBELL, K.M., & CAMPBELL, D.J. Effects of extrinsic financial rewards on intrinsic motivation. Journal of Applied Psychology, 1977, 62, 9-15.

REINHARTH, L., & WAHBA, M.A. A test of alternative models of expectancy theory. Human Relations, 1976, 29, 257-272.

RIECKEN, H.W. A program for research on experiments in social psychology. In N.F. Washburne (Ed.), Decision, Values, and Groups, Vol.2. New York: Pergamon Press, 1962.

RIESMAN, D. The lonely crowd. New Haven, Conn.: Yale University Press, 1950.

ROBEY, J.B. Task design, work values, and work response: An experimental test. Organizational Behavior and Human Performance, 1974, 12, 264-273.

ROSS, M. Salience of reward and intrinsic motivation. Journal of Personality and Social Psychology, 1975, 32, 245-254.

ROTTER, J.B. Social learning and clinical psychology. Englewood Cliffs, N.J.: Prentice-Hall, 1954.

ROTTER, J.B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80, 1-28.

SALANICK, G.R. Interaction effects of performance and money on self-perception of intrinsic motivation. Organizational Behavior and Human Performance, 1975, 13, 339-351.

SALEH, S.D. Development of the Job Attitude Scale (JAS). University of Waterloo: Department of Management Sciences, 1971.

SALEH, S.D., & GRYGIER, T.G. Psychodynamics of intrinsic and extrinsic job orientation. Journal of Applied Psychology, 1969, 53, 446-450.

SALEH, S.D., & PASRICHA, V. Job Orientation and work behaviour. Academy of Management Journal, 18, 1975, 638-645.

SAUNDERS, D.R. The moderator variable as a useful took in prediction. In Proceedings of the 1954 Invitational Conference on Testing Problems. Princton, N.J.: Educational Testing Service, 1955.

SCOTT, W.E. The development of semantic differential scales as measures of 'morale'. Personnel Psychology, 1970, 5, 576-591.

SCOTT, W.E. The effect of extrinsic rewards on "intrinsic motivation": A critique. Organizational Behavior and Human Performance, 1975, 15, 117-129.

SCOTT, W.E., & ROWLAND, K. The generality and significance of semantic differential scales as measures of "morale". Organizational Behavior and Human Performance, 1970, 5, 576-591.

SIMS, H.P. JR., & SZILAGYI, A.D. Job characteristics relationships: Individual and structural moderators. Organizational Behavior and Human Performance, 1976, 17, 211-230.

SIMS, H.P., SZILAGYI, A.D., & KELLER, R.T. The measurement of job characteristics. Academy of Management Journal, 1976, 19, 195-212.

SIMS, H.P., SZILAGYI, A.D., & McKEMEY, D.R. Antecedents of work related expectancies. Academy of Management Journal, 1976, 19, 547-559.

SPENCE, K.W. Behaviour theory and conditioning. New Haven, Conn.: Yale University Press, 1956.

STAW, B.M. The attitudinal and behaviour consequences of changing a major organizational reward. Journal of Personality and Social Psychology, 1974 (a), 29, 742-751.

STAW, B.M. Notes toward a theory of intrinsic and extrinsic motivation. Paper presented at Eastern Psychological Association, 1974(b).

STAW, B.M. Intrinsic and extrinsic motivation. (University programs modular studies series) Morristown, N.J.: General Learning Press, 1976.

STAW, B.M., CALDER, B.J., & HESS, R.K. Intrinsic motivation and norms about payment. Unpublished manuscript, Northwestern University, 1976.

STAW, B.M., CALDER, B.J., HESS, R.K., & SANDELANDS, L. Intrinsic motivation and norms about payment. Journal of Personality, 1980, 48, 1-15.

STEERS, R.M., & PORTER, L.W. Motivation and work behaviour. New York: McGraw-Hill, 1975.

STONE, E.F. The moderating effect of work-related values on the job scope-job satisfaction relationship. Organizational Behaviour and Human Performance, 1976, 15, 147-167.

STONE, E.F., MOWDAY, R.T., & PORTER, L.W. Higher order need strengths as moderators of the job-scope satisfaction relationship. Journal of Applied Psychology, 1977, 62, 466-471.

THORNDIKE, E.L. An experimental study of rewards. Teachers College Contributions to Education, 1933, No.580.

TOLMAN, E.C. Purposive behaviour in animals and men. New York: Appleton-Century-Crofts, 1932.

TOLMAN, E.C. Principles of performance. Psychological Review, 1955, 62, 315-326.

TURNAGE, J.J., & MUCHINSKY, P.M. The effects of reward contingency and participative decision making on intrinsically and extrinsically motivating tasks. Academy of Management Journal, 1976, 19, 482-489.

TURNEY, J.R. Expectancy x valence and intrinsic activity value as predictors of motivation in a technical-professional organization. Proceedings of the 80th Annual Convention of the American Psychological Association, 1972, 453-454.

TURNEY, J.R., & COHEN, S.L. Influence of work content on extrinsic outcome expectancy and intrinsic pleasure predictions of work effort. Organizational Behavior and Human Performance, 1976, 17, 311-327.

UMSTOT, D.D., BELL, C.H., & MITCHELL, T.R. Effects of job enrichment and task goals on satisfaction and productivity. Impliations for job design. Journal of Applied Psychology, 1976, 61, 379-394.

VROOM, V. Work and motivation. New York: Wiley, 1964.

WAHBA, M.A., & HOUSE, R.J. Expectancy theory in work and motivation: Some logical and methodological issues. Human Relations, 1974, 27, 121-147.

WANOUS, J. Individual differences and reactions to job characteristics. Journal of Applied Psychology, 1974, 59, 616-622.

WARR, P., COOK, J., & WALL, T. Scales for the measurement of some work attitudes and aspects of psychological well-being. Journal of Occupational Psychology, 1979, 52, 129-148.

WHITE, J.K. Individual differences and the job quality-worker response relationship: Review, integration and comments. Academy of Management Review, 1978, 3, 267-280.

WHITE, R.W. Motivation reconsidered: The concept of competence. Psychological Review, 1959, 66, 297-333.

MYER, H.H. The pay for performance dilemma. Organizational Dynamics, Winter 1973, 39-50.

McCLELLAND, D.C. Measuring motivation in fantasy: The achievement motive. In H. Guetzkow (Ed.), Groups, leadership, and man. Pittsburg: Carnegie Press, 1951.

McCLELLAND, D.C. The achieving society. Princeton, N.J.: Van Nostrand, 1961.

McCLELLAND, D.C. Assessing Human Motivation. Morristown, N.J.: General Learning Press, 1971.

McCLELLAND, D.C. The role of educational technology in developing achievement motivation. In D.C. McClelland and R.W. Steels (Eds.), Human motivation: A book of readings. Morristown, N.J.: General Learning Press, 1973.

McGREGOR, D. The human side of enterprise. New York: McGraw-Hill, 1960.

NORD, W.R. Beyond the teaching machine: The neglected area of operant conditioning in the theory and practice of management. Organizational Behavior and Human Performance, 1969, 4, 375-401.

NOTZ, W.W. Work motivation and the negative effects of extrinsic rewards: A review with implications for theory and practice. American Psychologist, 1975, 30, 884-891.

OLDHAM, G.R. Intrinsic motivation: Relationship to job characteristics and performance. Paper presented at the Eastern Psychological Association, 1974.

OLDHAM, G.R., HACKMAN, J.R., & PEARCE, J.L. Conditions under which employees respond positively to enriched work. Journal of Applied Psychology, 1976, 61, 395-403.

OPSAHL, R.L., & DUNNETTE, M.D. The role of financial compensation in industrial motivation. Psychological Bulletin, 1966, 66, 94-118.

ORPEN, C. The effects of job enrichment on employee satisfaction, motivation, involvement, and performance: A field experiment. Human Relations, 1979, 32, 189-217.

PATE, L.E.Cognitive versus reinforcement view of intrinsic motivation. Academy of Management Review, 1978, 3, 505-514.

PAUL, W.J., ROBERTSON, K.B., & HERZBERG, F. Job enrichment pays off. Harvard Business Review, 1969, 47, 61-68.

PHILLIPS, J.S., & LORD, R.G. Determinants of intrinsic motivation: Locus of control and competence information as components of Deci's Cognitive Evaluation Theory. Journal of Applied Psychology, 1980, 65, 211-218.

PIERCE, J.L., & DUNHAM, R.B. Task design: A literature review. Academy of Management Review, 1976, 1, 83-97.

WHITE, S.E., & MITCHELL, T.R. Job enrichment versus social cues: A comparison and competitive test. Journal of Applied Psychology, 1979, 64, 1-9.

WOLLACK, S., GOODALE, J.G., WIJTING, J.P., & SMITH, P.C. Development of the survey of work values. Journal of Applied Psychology, 1971, 55, 331-338.

YUKL, G.A., & LATHAM, G.P. Consequences of reinforcement schedules and incentive magnitudes for employee performance: Problems encountered in an industrial setting. Journal of Applied Psychology, 1975, 60, 294-298.

YUKL, G.A., LATHAM, G.P., & PURSELL, E.D. The effectiveness of performance incentives under continuous and variable ratio schedules of reinforcement. Personnel Psychology, 1976, 56, 19-23.

YUKL, G.A., WEXLEY, K.N., & SEYMOUR, J.D. Effectiveness of pay incentives under variable ratio and continuous reinforcement schedules. Journal of Applied Psychology, 1972, 56, 19-23.

ZEDECK, S. Problems with the use of moderator variables. Psychological Bulletin, 1971, 76, 295-310.

APPENDIX A

BACKGROUND INFORMATION FOR THE EXECUTIVE MANAGER OF THE NEW PLYMOUTH COMMUNITY DEVELOPMENT PROGRAMME (NPCDP)

(This version of the background information contains material for the enriched task structure)

IN-BASKET INSTRUCTION SHEET

You have been away to a conference in Wellington and over the past few days, a number of items have accumulated in the in-basket; they include some memo's, letters and telephone messages. You, the executive, must act on each of these items by delegating, calling for information, referring to others, meeting with superiors, subordinates and peers, planning, dealing with the item yourself, etc.

As you are taking this test, place yourself in the position of John W. Waitere, Executive Director of Community Development Programme in New Plymouth. Respond to each of the ten items in your in-basket accordingly. Everything you do must be in writing. If you choose to write a letter to the Mayor of New Plymouth about his wife's appointment to the Advisory Board, actually draft the letter. You can use the stationery provided or write notes on the items themselves. Make memos to yourself about things you want to do later concerning each item, outline planned actions, draw up agendas for meetings, send memo's to other people, or make notes about things you plan to say to them.

For each item, you should take as much action as you can, given the information available. However, do not make assumptions which are not warranted by the items or by the background information.

In all cases, clip your notes, memo's, letters, etc., to the items concerned. This may seem tedious when you would normally handle items on a much more informal basis. However, in order to score the exercise and administer the pay rate, it is important that we know what you have done or

plan to do in each case.

Try to be yourself, John W. Waitere. You will be given 15 minutes to look through the background information, and ninety minutes to complete the ten items which are in Envelope B; apportion your time accordingly.

IN-BASKET BACKGROUND INFORMATION SHEET

Community Development Programme, New Plymouth (NPCDP)

New Plymouth, a community of 36,000 is the commercial centre and port for a highly productive agricultural and pastoral hinterland. During the last ten years population has increased rapidly with building of the oil installations at Kapuni and Maui. Most of the town's newer inhabitants are Maori and Polynesian workers who came to New Plymouth looking for stable working conditions.

The New Plymouth Community Programme is a civic organisation which has been operating in New Plymouth for six years. It is a youth training and recreation organisation and the members are mostly between the ages of 13 and 21, drawn from all sections of the community, regardlesss of their occupations, religious denomination or political inclination. It provides vocational training, counselling, education and recreation, particularly for the unemployed.

The social work of the NPCDP is based, as far as possible, on the following criteria of social and personality development:

1. The promotion of harmonious social relationships (including the converse reduction of anti-social behaviour).
2. The cultivation of enjoyable interests and activities.
3. The fostering of physical and psychological health - including self-control (or ego-strength).
4. The development of social and occupational skills.
5. The development of constructive and caring behaviour.
6. The development of a positive self-image and

identity (reflecting 1, 2, 3, 4, and 5); and, as further aspects or concomitants of the above.

7. The diminution of delinquent behaviour.

8. Support for educational progress.

Forms of Activity

The NPCDP provides and supports places for recreation where all members of the society can feel secure and at home. While accepting the need of young people for places where they can feel at home, the NPCDP continues the policy of fostering friendly enjoyable contact between ethnic minorities (Maoris and Pacific Islanders in particular) and Pakehas as well as among young Maori people from different tribal or sub-tribal origins or localities. It also attempts to promote the cultural aspects of the New Zealand society.

To encourage friendly interaction and sensitivity to cultural values among groups of young people from different areas and of varying social background and ethnic composition, the NPCDP organises overnight excursions, particularly of a marae-type character, on a marae.

Staffing

Because of the heavy demands made on the staff working at the Centre and the different branches located in the city, a policy which has been actively pursued for the past three years has been to appoint additional staff from the active members of NPCDP to positions (possibly initially part-time) as finance permits.

Most of the staff have had a period of training and experience with the needs of youth and a capacity of

collaborating with young people from different social and ethnic backgrounds.

In order to gain confidence of the young members of this organisation, a high proportion of the staff working are themselves young and from different social and ethnic composition.

Relationships with the Local Community

To gain the support of, and to work in co-operation with, the community in general, social functions are often held in the City Centre where elders, welfare officers, officials from the public service, parents, etc., are invited to participate in the activities of the organisation.

While giving recognition to the importance of the marked influence of young people on one another (as, for example, in making use of the influence of older upon younger boys and girls), steps are taken by the NPCDP to promote understanding between parents and their children and parents' increased interest in, and involvement with, their children.

Relationships with Other Social Service Agencies

The NPCDP has had close links with government social service departments since its establishment and continues to extend this. It also has co-operations with several voluntary organisations such as churches and service clubs.

In collaborating with New Plymouth schools regarding to the classes held at the City Centre, meetings are organised with the principals of the schools and the

activities are co-ordinated accordingly.

NPCDP City Centre

Situated in the commercial and aministrative centre of New Plymouth city, the NPCDP centre contains a large main room with a counter from which refreshments are served and in which dancing to canned music or band occurs; in a partitioned-off area table tennis may be played. There is a room with two pool tables and a bowling alley. Besides a kitchen there are three other rooms for varied use, e.g., craft. In one of these, the workshop class for school drop-outs has been held. The peak night for attendance is Friday when typically around 200 young people are present and a late free bus is available to transport youngsters to the outskirts of New Plymouth. On Saturday night there is a smaller and more variable attendance which would reach a maximum of around 100. The centre is also open until 9.30 p.m., on Tuesdays and Wednesdays when young people can 'drop in' and chat, often those with problems.

For the first four months of the NPCDP City Centre's existence, after its opening in November, 1977, not many attended and only a minority of these were Maoris or Polynesians. The increasing number of Maori youth flooded into the centre and tended to show animosity to any Pakeha youngster who might arrive. Pakehas ceased to attend. There was considerable violent and disruptive behaviour with damage to property and such incidents as bottles being thrown out of windows. Chief Superintendent Dan Thompson, the local Police chief,was faced with widespread pressure

to take action to close the NPCDP City centre as a centre of violence and destructiveness. He, however, took the view that disruptive behaviour, previously widespread throughout the city, was merely being centralised and that closure would mean dispersal of destructive and violent behaviour, which would make it less amenable to control (thus making his job tougher). As a result of the efforts of the staff members of the NPCDP centres, the type of behaviour complained of is no longer a problem.

Those running the NPCDP faced a critical and difficult situation in the winter of 1977. The general policy was to be as accepting as possible and gain the trust of the young people but also to curb unruly behaviour. Especially trusting relationships became established with some of the young people who were given such responsibilities as helping to guard the outside doors of the centres and administering the rule of no admittance after 10 p.m., the closing time of bars, so that disturbances from drunken behaviour would be eliminated. Rules were introduced forbidding the bringing of alcohol into the premises and the wearing of boots and other items of clothing that could cause physical harm in outbursts of violence. To date, there has been no significant recrudescence of the 1977 incident in any of the NPCDP centres or elsewhere in New Plymouth among the age group catered for mainly by the NPCDP, youngsters of around 13 to 21 years old.

Both in 1982, and to a greater degree more recently, the stabilizing influence of older youth, that is eighteen- and nineteen-year-olds, has been encouraged.

Since the virtual monopolizing of the NPCDP city

centre by Maori and Polynesian youth in 1977, increasing attempts have been made to attract Pakeha youngsters. With the help of the mass media and the City Council, these attempts have been successful and the proportion of Pakeha attending these centres has increased dramatically.

The Kyle Street Workshop Adjustment Class

This centre was initiated in January 1980 by Mr P. Magill, former Executive Director of the NPCDP, with Mrs. K. Titchener as supervisor, for young people who have been having serious difficulty with their schooling.

Mrs. Titchener has given or arranged for lessons or practice in these aspects: elementary maths, reading, spelling, typing, art, speech, physical co-ordination, sewing, hygiene and personal appearance, shopping and money-handling. The programme is mainly aimed at developing skills and confidence, whether physical or social, and the student graduates to an outside job. Counselling with students, discussion with parents and co-operation with social workers and employers are also included in the supervisor's work.

The Gymnasium, Barret Street Centre

The Gymnasium is situated on the NPCDP land in Barret Street and is centrally located to serve residential areas of Napier, in particular of lower income earner's concentration.

The Gymnasium provides for such organised activities as Gymnastics, Badminton, Boxing, Wrestling, Judo and

Karate. To encourage the youth to enrol for such organised activities, in 1981 'Open Times' were introduced which are simply times when the gym is open for members and non-members to meet, mix, play and generally socialise in a place where they are all welcome. Since the beginning of last year, free hot lunches are provided during such days. The effects of this have been very noticeable. To this programme and to this building come many children who for various reasons are not made to feel very welcome elsewhere in the community, even in their own homes.

Open Times have not been trouble free time at the gym. At its initiation, there were instances of racial clashes, destructive energies and other minor upsets. But in a short time, as the children felt a part of the place and a feeling that this was their place, Open Times ran themselves and the increase in self discipline and group co-operation have been very noticeable indeed.

The Gymansium hall has also been a venue for NPCDP Saturday evening dances which have been held monthly during 1982. These are publicised at the NPCDP City centre and are popular with most of the young people who attend there. These dances are proving to be a successful way of mingling people together and thus improving human relations.

You were chosen Executive Director of the New Plymouth Community Development Programme two years ago after the former Executive Director, a retired Member of Parliament and native of New Plymouth, was suddenly paralyzed by a stroke. He had been the first Executive Director for the NPCDP during its initial struggles.

You are a non-European. You were raised in Auckland and come from a West Samoan background of genteel, if relatively poor, parents who believe strongly in education. You have a B.A. in Psychology from Victoria University of Wellington and an M.A. in Urban Studies from Auckland University. You planned to go for a doctorate but your wife became pregnant.

Your supervisor at Auckland University heard about this opening in the NPCDP agency in New Plymouth and suggested you go for an interview. Although you were better qualified than other applicants, you were also the only non-European interviewed, and you are well aware that your colour was a deciding factor in your being offered the position. You accepted the position with some reluctance, but you decided that practical experience in your field would be valuable.

You now plan to stay a third year before returning to university to work on your doctorate degree. Your wife has accepted a teaching position, and most of her salary will be saved to enable you to return to university full-time. You spent four years in the Army between your B.A. and M.A., and you are now thirty-one years old.

As an Executive Director, you are responsible for the planning, development and implementation of all the activities of the organization. There are about thirty members of staff working in this organisation. Information about your secretary, your personal director, and your director of research and planning is on the next page. Other members of your staff include two social workers, four secretaries, and a general office staff of three.

You also employ two nursery school supervisors, a thrift shop manager, three recreation directors, six assistant recreation directors, and the ususal staffing for youth centres.

Today is Saturday. You have just returned from a Community Development Programme Director's Conference in Wellington and while stopping by the office for your mail, you decide to clear up your in-basket in preparation for what you know will be an exhausting week.

Only your secretary, Mary, is in the outer office, but no other staff member is present whom you could consult.

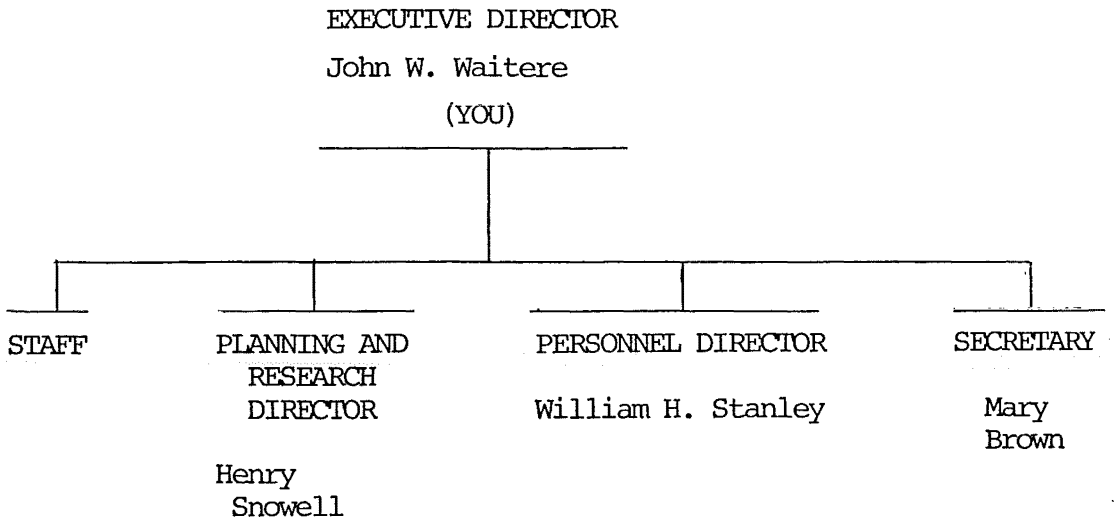
EXECUTIVE DIRECTOR
John W. Waitere
(YOU)
STAFF
PLANNING AND RESEARCH DIRECTOR
Henry Snowell
PERSONNEL DIRECTOR
William H. Stanley
SECRETARY
Mary Brown

Figure 1.

Secretary to the Executive Director: Mary Brown

Employed by the former Executive Director, Mrs. Brown is extremely valuable to you because of her New Plymouth background and her knowledge of NPCDP history. She is a fifty-seven-year-old widow with a wit as sharp as her secretarial skills, and you have always felt very comfortable in dealing with her.

Personnel Director: William H. Stanley

He is forty-six, married, with two children in high school. His wife's maiden name was Carrington who owned a lot of farmlands in the Taranaki region, but all that remains of her formerly wealthy background is expensive tastes. Stanley came to New Plymouth to join his uncle's law firm but neglected his practice to keep up with the social whirl of a promising young bachelor. Two disastrous campaigns for a parliamentary seat and the death of his uncle finally brought him to a job as a tax accountant until he was hired by NPCDP. Stanley is reasonably effective in his job but has a great need for ego satisfaction. He was sure that he would be appointed Executive Director and had, in fact, taken over on his own volition for the three-month period between executive directors.

Planning and Research Director: Henry Snowell

He is thirty-eight and unmarried. He has a B.A. in sociology from Waikato University in Hamilton. He also has sixteen hours of graduate credit in social work, completed part-time before being appointed as Planning and Research Director at the NPCDP. Before his present

position, he was assistant manager of a shoe store in Hamilton, where he had worked during the summers of his undergraduate days. His real interest, however, was working for his church, the Pentecostal Tabernacle, and for the YMCA, as a volunteer group organizer. His satisfaction from this volunteer work came through his self-appointed social work with Maoris and other Polynesian teenagers. He is well-known in Hamilton for his success in moulding street gangs into productive project clubs. He feels some frustration because his position does not allow him to work closely with the people most affected by NPCDP programmes.

APPENDIX B

BACKGROUND INFORMATION FOR THE
MANAGEMENT-EMPLOYEE RELATIONS
OFFICER OF THE NEW PLYMOUTH
COMMUNITY DEVELOPMENT PROGRAMME
(NPCDP)

(This version of the background information contains material for the unenriched task structure)

IN-BASKET INSTRUCTION SHEET

You were out of the office all day Thursday and Friday attending to some community relations matter and you didn't have a chance to get the messages or look through the mail accumulated in your in-basket. As the Management-Employee Relations Officer you do not "run the show". For all practical purposes, you must report either to your boss Sam or directly to Jack. You cannot make any direct decisions, rather you collect information and report it to your superiors or subordinates.

As you are taking this test, place yourself in the position of John W. Waitere, Management-Employee Relations Officer of the Community Development Programme in New Plymouth. Respond to each of the ten items in your in-basket accordingly. Everything you do must be in writing. If you choose to make a list of the facts or issues you wish to report, actually draft the list. You can use the stationery provided or write notes on the items themselves. Make memo's to yourself about the things you want to do, outline all actions, or make notes about things you plan to say to them concerning each item.

In all cases, clip your notes, memo's, letters, etc., to the items concerned. This may seem tedious when you would normally handle items on a much more informal basis. However, in order to score the exercise and administer the pay rate, it is important that we know what you have done or plan to do in each case.

For each item, you should take as much action as you can given the information available. However, do not make

assumptions which are not warranted by the items or by the background information.

Try to be yourself, John W. Waitere. You will be given 15 minutes to look through the background information, and ninety minutes to complete the ten items which are in Envelope B; apportion your time accordingly.

IN-BASKET BACKGROUND INFORMATION SHEET

New Plymouth Community Development Programme (NPCDP)

New Plymouth, a community of 36,000, is the commercial centre and port for a highly productive agricultural and pastoral hinterland. During the last ten years population has increased rapidly with building of the oil installations at Kapuni and Maui. Most of the town's newer inhabitants are Maori and Polynesian workers who came to New Plymouth looking for stable working conditions.

The New Plymouth Community Programme is a civic organisation which has been operating in New Plymouth for six years. It is a youth training and recreation organisation and the members are mostly between the ages of 13 and 21, drawn from all sections of the community, regardless of their occupations, religious denomination or political inclination. It provides vocational training, counselling, education and recreation, particularly for the unemployed.

The social work of the NPCDP is based, as far as possible, on the following criteria of social and personality development:

1. The promotion of harmonious social relationships (including the converse reduction of anti-social behaviour).
2. The cultivation of enjoyable interests and activities.
3. The fostering of physical and psychological health - including self-control (or ego-strength).
4. The development of social and occupational skills.
5. The development of constructive and caring behaviour.

6. The development of a positve self-image and 'identity' (reflecting 1,2,3,4 and 5); and, as further aspects or concomitants of the above.
7. The diminution of delinquent behaviour.
8. Support for educational progress.

Forms of Activity

The NPCDP provides and supports places for recreation where all members of the society can feel secure and at home. While accepting the need of young people for places where they can feel at home, the NPCDP continues the policy of fostering friendly enjoyable contact between ethnic minorities (Maoris and Pacific Islanders in particular) and Pakehas as well as among young Maori people from different tribal or sub-tribal origins or localities. It also attempts to promote the cultural aspects of the New Zealand society.

To encourage friendly interaction and sensitivity to cultural values among groups of young people from different areas and of varying social background and ethnic composition, the NPCDP organises overnight excursions, particularly of a marae-type character, on a marae.

Staffing

Because of the heavy demands made on the staff working at the Centre and the different branches located in the city, a policy which has been actively pursued for the past three years has been to appoint additional staff from the active members of NPCDP to positions (possibly initially part-time) as finance permits.

Most of the staff have had a period of training and experience with the needs of youth and a capacity of

collaborating with young people from different social and ethnic backgrounds.

In order to gain confidence of the young members of this organisation, a high proportion of the staff working are themselves young and from different social and ethnic composition.

Relationships with the Local Community

To gain the support of, and to work in co-operation with, the community in general, social functions are often held in the City Centre where elders, welfare officers, officials from the public service, parents, etc., are invited to participate in the activities of the organisation.

While giving recognition to the importance of the marked influence of young people on one another (as, for example, in making use of the influence of older upon younger boys and girls), steps are taken by the NPCDP to promote understanding between parents and their children and parents' increased interest in, and involvement with, their children.

Relationships with Other Social Service Agencies

The NPCDP has had close links with government social service departments since its establishment and continues to extend this. It also has co-operations with several voluntary organisations such as churches and service clubs.

In collaborating with New Plymouth schools regarding to the classes held at the City Centre, meetings are organised with the principals of the schools and the activities are co-ordinated accordingly.

NPCDP City Centre

Situated in the commercial and administrative centre of New Plymouth city, the NPCDP centre contains a large main room with a counter from which refreshments are served and in which dancing to canned music or band occurs; in a partitioned-off area table tennis may be played. There is a room with two pool tables and a bowling alley. Besides a kitchen there are three other rooms for varied use, e.g., craft. In one of these the workshop class for school drop-outs has been held. The peak night for attendance is Friday when typically around 200 young people are present and a late free bus is available to transport youngsters to the outskirts of New Plymouth. On Saturday night there is a smaller and more variable attendance which would reach a maximum of around 100. The centre is also open until 9.30 p.m. on Tuesdays and Wednesdays when young people can 'drop in' and chat, often those with problems.

For the first four months of the NPCDP City Centre's existence, after its opening in November, 1977, not many attended and only a minority of these were Maoris or Polynesians. The increasing number of Maori youth flooded into the centre and tended to show animosity to any Pakeha youngster who might arrive. Pakehas ceased to attend. There was considerable violent and disruptive behaviour with damage to property and such incidents as bottles being thrown out of windows. Chief Superintendent Dan Thompson, the local Police chief, was faced with widespread pressure to take action to close the NPCDP City Centre as a centre of violence and destructiveness. He, however, took the view that disruptive

behaviour, previously widespread throughout the city, was merely being centralised and that closure would mean dispersal of destructive and violent behaviour, which would make it less amenable to control (thus making his job tougher). As a result of the efforts of the staff members of the NPCDP centres, the type of behaviour complained of is no longer a problem.

Those running the NPCDP faced a critical and difficult situation in the winter of 1977. The general policy was to be as accepting as possible and gain the trust of the young people but also to curb unruly behaviour. Especially trusting relationships became established with some of the young people who were given such responsibilities as helping to guard the outside doors of the centres and administering the rule of no admittance after 10 p.m., the closing time of bars, so that disturbances from drunken behaviour would be eliminated. Rules were introduced forbidding the bringing of alcohol into the premises and the wearing of boots and other items of clothing that could cause physical harm in outbursts of violence. To date, there has been no significant recrudescence of the 1977 incident in any of the NPCDP centres or elsewhere in New Plymouth among the age group catered for mainly by the NPCDP, youngsters of around 13 to 21 years old.

Both in 1982, and to a greater degree more recently, the stabilizing influence of older youth, that is eighteen- and nineteen-year olds, has been encouraged.

Since the virtual monopolizing of the NPCDP city centre by Maori and Polynesian youth in 1977, increasing attempts have been made to attract Pakeha youngsters. With the help of mass media and the City Council, these attempts have been

successful and the proportion of Pakeha attending these centres has increased dramatically.

The Kyle Street Workshop Adjustment Class

This centre was initiated in January 1980 by Mr. P. Magill, former Executive Director of the NPCDP, with Mrs. K. Titchener as supervisor, for young people who have been having serious difficulty with their schooling.

Mrs. Titchener has given or arranged for lessons or practice in these aspects: elementary maths, reading, spelling, typing, art, speech, physical co-ordination, sewing, hygiene, and personal appearance, shopping and money-handling. The programme is mainly aimed at developing skills and confidence, whether physical or social, and the student graduates to an outside job. Counselling with students, discussion with parents and co-operation with social workers and employers are also included in the supervisor's work.

The Gymnasium, Barret Street Centre

The Gymnasium is situated on the NPCDP land in Barret Street and is centrally located to serve residential areas of Napier, in particular of lower income earners' concentration.

The Gymnasium provides for such organised activities as Gymnastics, Badminton, Boxing, Wrestling, Judo and Karate. To encourage the youth to enrol for such organised activities, in 1981 'Open Times' were introduced which are simply times when the gym is open for members and non-members to meet, mix, play and generally socialise in a place where they are all welcome. Since the beginning of last year, free hot lunches are provided during such days. The effects of this have been very noticeable. To this programme and to this building come

many children who for various reasons are not made to feel very welcome elsewhere in the community, even in their own homes.

Open Times have not been trouble free time at the gym. At its initiation, there were instances of racial clashes, destructive energies and other minor upsets. But in a short time, as the children felt a part of the place and a feeling that this was their place, Open Times ran themselves and the increase in self discipline and group co-operation have been very noticeable indeed.

The Gymnasium hall has also been a venue for NPCDP Saturday evening dances which have been held monthly during 1982. These are publicised at the NPCDP City centre and are popular with most of the young people who attend there. These dances are proving to be a successful way of mingling people together and thus improving human relations.

You were chosen Management-Employee Relations Officer of the Community Development Programme two years ago after the former Management-Employee Relations Officer, a retired civil servant and native of New Plymouth, was suddenly paralysed by a stroke. He had been in the position for three years and had been the first Management-Employee Relations Officer for the NPCDP during its initial struggles.

You are a non-European. You were raised in Auckland and come from a West Samoan background of genteel, if relatively poor, parents who believed strongly in education. You have a B.A. in Psychology from Victoria University of Wellington and an M.A. in Urban Studies from Auckland University. You had planned to go for a doctorate, but your wife became pregnant.

Your supervisor at Auckland University heard about this opening in the NPCDP agency in New Plymouth and suggested that you go for an interview. Although you were better qualified than other applicants, you were also the only non-European interviewed and you are well aware that your colour was a deciding factor in your being offered the position. You accepted the position with some reluctance, but you decided that practical experience in your field would be valuable.

You now plan to stay a third year before returning to university to work on your doctorate degree. Your wife has accepted a teaching position, and most of her salary will be saved to enable you to return to university full-time. You spent four years in the Army between your B.A. and M.A., and you are now thirty-one years old.

The organisation structure of NPCDP looks like Figure 1. Your boss Sam, has been with NPCDP for years and spends most of his time in community relations and other affairs that affect the Community Development Programme. As a Management-Employee Relations Officer you act as a bridge between the Managers of the Organisation and the staff members. You are responsible to the President, Vice President and the Executive Director for the discharge of your duties. You are expected to work closely with the Executive Director and Vice President providing a back-up service in training needs, education, counselling job search programme, recreation and other tasks that may be allocated from time to time by either the Executive Director or the Vice President.

There are three staff members responsible to you, a secretary, the personnel officer and the director of research and planning. Information about these three staff members

is on the next page. Other members of the staff include two social workers, four secretaries and a general office staff of three. The organisation also emplys two nursery school supervisors, a thrift shop manager, three recreation directors, six assistant recreation directors, and the usual staffing for youth centres.

Today is Saturday, and you have come to the office to look through the messages and the mail in your in-basket and to prepare a report for the Executive Officer and the Vice President. You wish to get organized before Monday, which you know will be an exhausting week. It is now 9.00a.m. and your secretary, Mary, has promised to come at 10.30a.m. to type out the report for you, so you had better get to work and finish it before she arrives. No other staff member is present whom you could consult.

Secretary to the Management- Employee Relations Officer:
- Mary Brown

Employed by the former Executive Director, Mrs. Brown is extremely valuable to you because of her New Plymouth background and her knowledge of NPCDP history. She is a fifty-seven-year-old widow with a wit as sharp as her secretarial skills, and you have always felt very comfortable in dealing with her.

Personnel Officer: - William H. Stanley

He is forty-six, married, with two children in high school. His wife's maiden name was Carrington who owned a lot of farmlands in the Taranaki region, but all that remains of her formerly wealthy background is expensive tastes. Stanley came to New Plymouth to join his uncle's law firm but neglected his practice to keep up with the social whirl of a promising young bachelor. Two disastrous campaigns for a parliamentary seat and the death of his uncle finally brought him to a job as a tax accountant until he was hired by NPCDP. Stanley is reasonably effective in his job but has a great need for ego satisfaction. He was sure that he would be appointed Management-Employee Relations Officer and had, in fact, taken over on his own volition for the three-month period between executive officers.

Planning and Research Officer: - Henry Snowell

He is thirty-eight and unmarried. He has a B.A. in sociology from Waikato University in Hamilton. He also has sixteen hours of graduate credit in social work, completed part-time before being appointed as Planning and Research Officer at the NPCDP. Before his present position, he was

assistant manager of a shoe store in Hamilton, where he had worked during the summers of his undergraduate days. His real interest, however, was working for his church, the Pentecostal Tabernacle, and for the YMCA, as a volunteer group organizer. His satisfaction from this volunteer work came through his self-appointed social work with Maoris and other Polynesian teenagers. He is well-known in Hamilton for his success in moulding street gangs into productive project clubs. He feels some frustration because his position does not allow him to work closely with the people most affected by NPCDP programmes.

The following issues should be considered:

1. Do you want ex-convicts working around youth centres? To what degree is the function of this organisation rehabilitation?
2. As a public official, can you accept gifts?
3. As an executive, should you serve as a "collection agency?"
4. How responsive should a secular organisation be to pressure from religious factions?
5. What is your responsibility to enforce the law? How will an "informer" affect your relationship with young people who attend youth centre functions?
6. What guidelines should you have for accepting tax-write-off gifts?
7. What guidelines can be established for dealing with adverse publicity?
8. To what degree should one be influenced by political pressure?
9. How responsive should public organisations be to pressure from minority groups?
10. What are the responsibilities of an executive with regard to the morals of his subordinates?

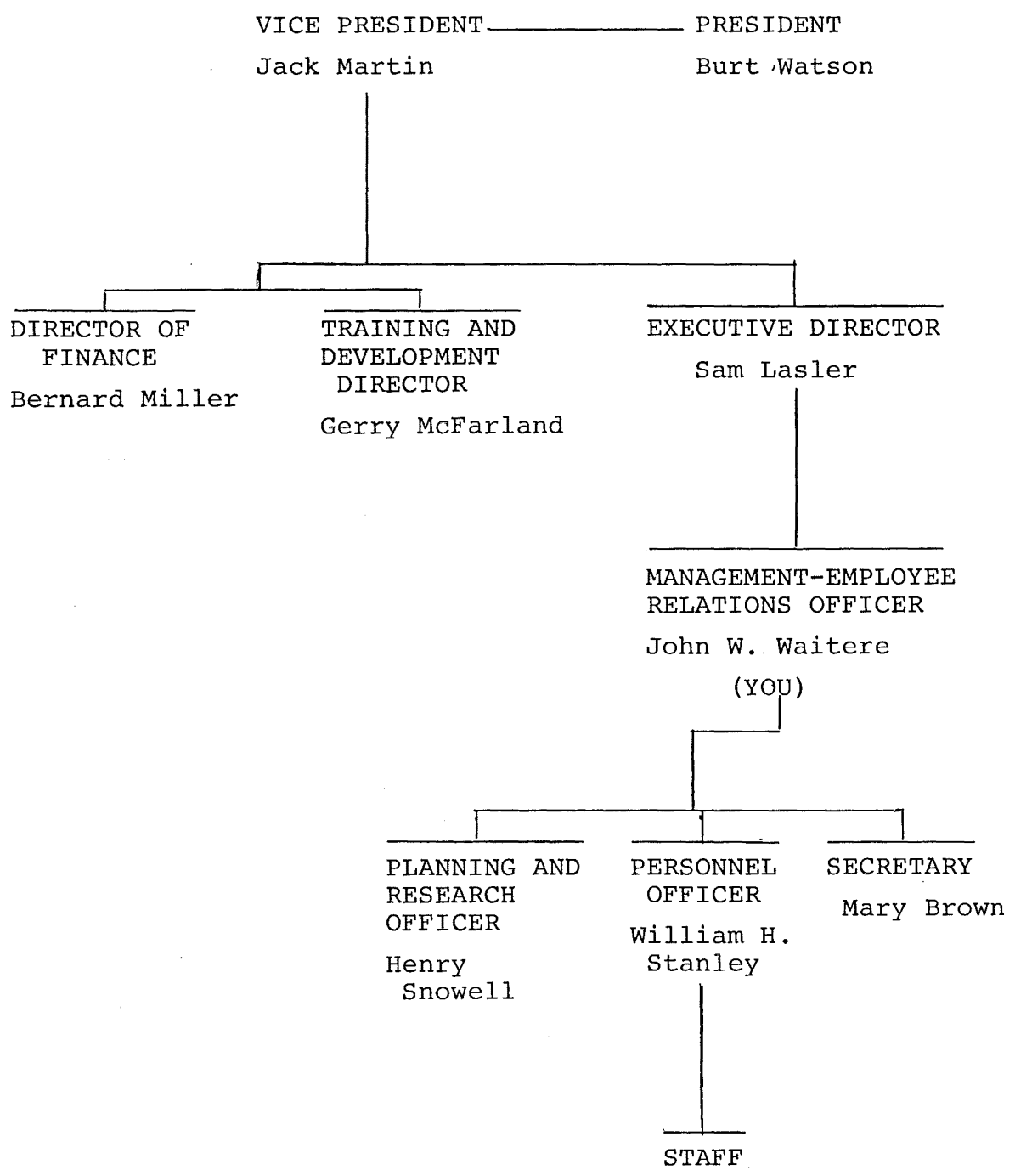
VICE PRESIDENT
Jack Martin
PRESIDENT
Burt Watson
DIRECTOR OF FINANCE
Bernard Miller
TRAINING AND DEVELOPMENT DIRECTOR
Gerry McFarland
EXECUTIVE DIRECTOR
Sam Lasler
MANAGEMENT-EMPLOYEE RELATIONS OFFICER
John W. Waitere
(YOU)
PLANNING AND RESEARCH OFFICER
Henry Snowell
PERSONNEL OFFICER
William H. Stanley
SECRETARY
Mary Brown
STAFF

Figure 1.

APPENDIX C

THE NEW PLYMOUTH COMMUNITY

DEVELOPMENT PROGRAMME (NPCDP)

IN-BASKET ITEMS

ITEM 1

New Plymouth Prison,
Private Bag,
New Plymouth.

March 15, 1983.

Dear Mr Waitere,

You'll probably think it's funny, getting a letter from a guy in prison but Rev. Phillips our chaplin said it was worth a try.

I have served three and a half years on a seven year sentence for possession of drugs and am about to be put on parole. I was only in the flat with the guys who had the drugs but we all got busted and I guess it was my good luck as well as bad luck to go to prison. Rev. Phillips got hold of me right after I got here and really showed me how to put myself together. I had really known I was headed the wrong way in high school when Henry Snowell who I heard works for you now was at the YMCA in Hamilton all the time getting the guys together to do projects. He really knew what he as talking about, even the religion part, but I was too stubborn to let myself be talked into it. Anyway I have grown up a lot in the last three years and a half and I think I would like to work with kids the way Henry did and maybe show them how to get more out of their lives than prison. I have been a trusty for two years and have been incharge of basketball, cricket, and swimming here. I know all about handling equipment and how to run things for recreation.

I am asking you to consider me for a job with NPCDP when I get out if you need any recreation people. I guess there is nothing I'd rather do and could do a better job at.

Yours truly,

Fred Ward

ITEM 2

STANDARD WHOLESALE FOODS

36 GILL STREET, NEW PLYMOUTH
A.B.STRAUSS, OWNER AND MANAGER
"WE GO WHOLE HOG FOR OUR CUSTOMERS"

15th March, 1983.

John W. Waitere
Management-Employee
Relations Officer,
New Plymouth Community
Development Programme,
110, Devon Street,
NEW PLYMOUTH.

Dear Mr. Waitere,

As a man who has a vital interest in the progress of New Plymouth, I wish to express my admiration for the fine work you and your staff are doing for that unfortunate segment of our population who suffer the heavy load of poverty and unemployment. Believe me, as a man who came to this country at age twelve with nothing in my pockets but one shilling and my mother's picture, I can appreciate how much your programme must mean to these people.

I have been proud to be a part of your Hot Lunch programme by supplying you with the most nourising food at as reasonable a wholesale price as you would find anywhere in the country. By me, I get the pleasure of contributing something worthwile, while at the same time increasing my volume of sales. I would like the opportunity of expressing my thanks to you in the best way an old "neighbourhood grocer" knows how. Please drop by my shop and pick up a nice ham roast for you and your wife.

Sincerely yours,

A.B. Strauss

AS/jbc

ITEM 3

TARANAKI DEPARTMENT STORE

EST. 1950. NEW PLYMOUTH'S OLDEST
AND FINEST DEPARTMENT STORE
HOME OWNED — J. M. RUGGLES, MANAGER

Credit Department
15th March, 1983.

John W. Waitere,
Management-Employee
Relations Officer,
New Plymouth Community
Development Programme,
110, Devon Street,
NEW PLYMOUTH.

Dear Sir:

We understand you employ a Mr. William H. Stanley as your Personnel Director. We feel you should call Mr Stanly's attention to the fact that his account with our store is severely in arrears. There have been no payments of any amount paid to us since May 12, 1982. At that time we informed Mr. Stanley that any further charges to his account would not be authorized. In the past two months Mrs. Stanley has made three unauthorized charge purchases totaling $584.00. This brings their account to $2,653.23, or $1,653.23 over their maximum authorization.

As the Stanleys and Mrs. Stanley's family have been steady customers since this store was established, we have hesitated to embarass them by taking the obvious steps; however, we now feel that we have gone beyond our capacity to accept further neglect of this financial responsibility. If substantial payment is not made by April 1, 1983, we will be forced to take the necessary legal action. Thank you for your co-operation.

Yours truly,

Monroe J. Ruggles
Credit Manager

MJR/tt

ITEM 4

24, Croyden Road,
New Plymouth.
14th March, 1983.

John Waitere,
Director,
NPCDP,
110, Devon St.,
New Plymouth.

Dear Sir:

I am writing as a concerned Catholic mother. My son Anthony and my daughter Anna attend your recreation centre on Kyle Street after school and the Saturday night dances. Many of my friends children from St. Paul's Parish also attend and they are behind me writing this letter. We feel that the recreation centre idea is fine because it gives our children a place to go without running in the streets which is important to parents of teenagers. But what we want to know is why your recreation director, Mr. Glassing and your assistant director, Miss Borden as well as two pin setters in the bowling alley and the girl who is the snack bar waitress all have come from the Pentecostal Tabernacle church. We know for a fact that these people invite out children to their church groups and even Sunday school. Miss Borden asked my daughter if she was "saved". The parents of St. Paul's parish call that religious bias and even though there aren't as many Catholics who go to the recreation centre as protestants, we understood that NPCDP was trying to help minority groups, not to force them under the influence of holy rollers!

The Catholic parents of St. Paul's parish are asking that our civil rights of religious freedom be given to our children. Leave religion out of your recreation programme and also who you hire to work there. Can't a Catholic girl serve hot dogs and cokes as well as Pentacostal Tabernacle girl?

Sincerely yours,

Jean W. Teeuwen

ITEM 5

CNP

To Mr. Waitere

Date 15.3.83 Time 1.00 p.m.

DURING YOUR ABSENCE

Mr Dan Thompson

of Chief of Police

Phone 546-770 Ex.236

Telephoned	X	Wishes to see you	
Please Telephone		Please call	
Called to see you		Will call again	

Message The old grafter wants to set a trap for some "pot pushers" he thinks are hanging around the McGeorge Rec. Centre. Wants to plant young detectives among the kids; also has a kid who's going to point them out.

MB

10:1

Dixon

ITEM 6

CNDP

INTERNAL MEMO

WRITTEN INSTRUCTIONS ARE BETTER

John--

James Baldwin came in to see me today and offered us all his old exercise equipment from the South Seas Health and Recreation that folded a few months ago. Naturally he wants to use it as a tax write-off. We could use the stuff for the basement gym we're setting up in the Barret Road Rec. Centre. Marion Jackson would also like a couple of things for her Fitness classes. I don't know if you want to deal with Baldwin, of course. Whatever you decide, I told him it would come officially from you.

Henry

PUT IT IN WRITING - VERBAL MESSAGES ARE QUICKLY FORGOTTEN AND OFTEN MISUNDERSTOOD.

ITEM 7(a)

CDNP

INTERNAL MEMO

WRITTEN INSTRUCTIONS ARE BETTER

Mr. Waitere--

Mr. Glen Otis, our distinguished advisory board chairman, came by here yesterday with this ugly little piece from the evening paper and asked you to field it. He has received at least a dozen phone calls about it since yesterday morning and is more than a little disturbed about it.

This Taylor character is a frustrated social climber and general "bad mouth" concerning any administration, but he is also fairly well known and respected enough to make things uncomfortable for us with this letter.

Mary

Put it in writing - Verbal messages are quickly forgotten and often misunderstood.

ITEM 7(b)

Monday, 14-3-83

TARANAKI HERALD

Editor of the Taranaki Herald:

Sir, — It is my unfortunate duty as a citizen of New Plymouth, a city of unusual integrity, to alert the good people who make this their home that once again we have been plundered by one of the devious, greedy organisations who ask our money in the name of charity and then line their own pockets, neglecting those they are alleged to be helping. Such an organisation is NPCDP, yet another attempt by the government to pacify the underprivileged and allow our consciences to rest while the true plight of the proverty stricken and alienated people is muffled by the back-slapping of self-satisfied administrators of so-called "programmes". True, it is a government supported organisation and therefore gleans our money through taxes; however, we are still, in the end, being fleeced of our charitable contributions.

We are not so naive as to miss the fact that the National Government spends wastefully, particularly on such "worthwhile" schemes as NPCDP. What has NPCDP done with this bountiful gift of New Plymouth taxpayers' hard earned money? Has it built teenage centres which would be the pride of this community with every possible piece of equipment and physical facility? Has it provided new classrooms for its Training Programme and hired the finest, best qualified teachers? has it even drawn from our local supply of qualified men to make its administrators; men who know and understand the problems to be faced in New Plymouth? The answer is no, to all points. A brief visit to any of the recreation centres will reveal that they have been converted from older buildings, probably long since condemned, such as the old Junction Road Railways Club, and are supplied with makeshift equipment and questionable people as their staff.

Certainly the teenagers in the training classes should get a better place than the basement or the unused corners of the Westown Boys High. And who are they hiring to assist these teenagers in learning? Not my wife, for example, a college graduate with two years of high school experience. No, citizens, the assistant at the Weston Training Centre is a woman who had a Fourth Form education and had been on welfare before she was hired. Her lack of qualifications is certainly no fault of hers, but they do give NPCDP an opportunity to pay a much smaller salary to than they would to my wife. All this is run, not by a local man, but an import from Auckland, with a fancy education, who they thought would look good in the the job because of his colour.

Surely he has no personal interest in New Plymouth. True, the assistant directors are local men, or at least they've lived here for a few years. Of course one is too busy at cocktail parties to take time to understand those not in his social set. His wife, by the way, has never dressed better.

The usual method of milking our tax dollars is through kick-backs from local contractors and wholesale suppliers. I do not have the information at this time to indicate exactly how it is being done, but what we must conclude is that large amounts of Government money are not finding their way to the minority groups NPCDP is supposed to serve, but to the pockets of NPCDP administrators. Neighbours of New Plymouth, are we again too apathetic to root out these spoilers of tax money? Wake up and write to your MPs! — Yours, etc.,

H. P. TAYLOR

ITEM 8

OFFICE OF THE MAYOR
CITY OF NEW PLYMOUTH

18th March, 1983.

John W. Waitere,
Management-Employee Relations Officer,
New Plymouth Community
Development Programme,
110, Devon Street,
NEW PLYMOUTH.

Dear John,

Millie and I were so pleased that you and Jan could make it to our garden party this year. It has become a real tradition for us in the past seven years and we were do disappointed last summer when you had to be out of town.

Millie was terribly impressed with all you said about the workings of NPCDP. She's very big on "causes", you know, and has really taken the Community Development Programme to her heart since the garden party. I might add that you and Bill Stanley make quite a team!

Bill informs us that there will be an opening on the Advisory Board of NPCDP begining in September. I needen't tell you that Millie sees that as an ideal way for her to help share in the projects that NPCDP is accomplishing so well. Of course, her associations with other leading civic groups, etc., could provide a terrific liaison among the people of New Plymouth who take their civic duties seriously and make NPCDP all the more effective.

Bill may have already discussed this with you. I'm sure Sara has put the bug in his ear since she and Millie are inseparable bridge partners.

Let me know how you think that Advisory Board position is shaping up. You probably have a lot of well qualified people in mind, but it never hurts to put in a plug for the little woman. She has an awful lot of influence as I discovered during two successful Mayoral campaigns.

Sincerely,

D.V. Sutherland

David V. Sutherland

ITEM 9

JEHOVAH'S WITNESSES
Kingdom Hall

TUKAPA ST., WESTOWN.
PLYMOUTH

14th March, 1983

John W. Waitere
Management-Employee Relations Officer
Community Development Programme,
110 Devon Street,
NEW PLYMOUTH.

Dear Sir,

As a member of a religious minority group with the same struggles, hopes, and frustrations as any other minority group, I find it difficult not to resent the fact that members of Jehovah's Witnesses have been ignored by such organisations as yours. True, we are much fewer in number than other ethnic or religious minorities, but nevertheless, we daily suffer indignities which the Community Development Programme is, in theory, attempting to eradicate. Our neglect goes even deeper. Not one man or woman of the Jehovah's Witnesses has ever been employed by the CDP even though many families of the Jehovah's Witnesses are below the income level set by your organisation as a criterion for hiring. Not a single Jehovah's teenager has been admitted to your Training Programme nor has any real attempt been made to make our children feel welcome at your recreation centres.

To favour any one minority group over another is to fail in your purpose, as I see it. Your co-operation would be greatly appreciated in the next month when your training programmes at the Centre starts. We have often been the target of verbal slurs and vicious "jokes". We all know how cruel people can be. Perhaps NPCDP could influence the educators of New Plymouth to shoulder their duty and see that this kind of discrimination be put to a stop. We are going to be a part of this "Community" for a long time, and we want some "Development" now.

Sincerely yours,

James E. Jacobs

James E. Jacobs
President.

ITEM 10

126 Jackson Road,
New Plymouth.

12th March, 1983

Dear Mr Waitere,

I feel obliged to write to you concerning my niece, Miss Amelia Tepania. One of your staff members at the Moturoa Recreation Centre, Eddy Daniels, who is one of the big shot directors there, has taken liberties with Miss Tepania and now, she finds herself going to have a baby. She has worked at the Moturoa Recreation Centre for five months as table game assistant, and though she's in charge of those games she ain't much more than a teenager herself in fact the same age as some of them. Is this the kind of man you are trusting teenagers with who would take advantage of a young girl after the Centre was closed? I realize that it takes two and Amelia is not all innocent, but she said she loved him and now him saying it was probably one of the boys who hang out there at the Saturday night dances. Amelia has turned seventeen and wouldn't be fooling around with those young boys, even if some of them do look older.

Mr. Waitere, you know that things are not always easy for people like us, even when you can get a job mostly. Well, Amelia's mother is sick and can't work and her husband is long since gone. If Amelia can't work with a baby coming, I don't know what they'll do as there are four other children younger in the family. Lord knows I can't take them all in with my husband only getting unemployment money. Her mother wouldn't write to you but I believe that something should be done, and right now about Eddie Daniels messing around with young girls. You make it clear to him that he has to support that child.

Yours truly,

Lucy Jackson

APPENDIX D

GUIDELINES FOR SCORING THE RESPONSES TO THE IN-BASKET ITEMS AND SAMPLE OF THE SCORING FORM

GUIDELINES FOR EVALUATING IN-BASKET PERFORMANCE

These guidelines are designed to give the In-Basket evaluator some bench marks for determining the quality of performance in handling the various In-Basket items. These guidelines therefore are not meant to be a scoring key used to add up the number of "right answers". Rather they should allow the evaluator to assess the examinee's general approach to the task.

PLANNING AND ORGANISING

Did he establish priorities for accomplishing his work and were they based on sound reasons? Note that there are three categories: High Priority, Secondary Priority, and Low Priority items. The order within these three categories is not necessarily in order of importance.

Did he provide suggestions, alternatives and back-up for his staff?

Did he provide himself with opportunities to review staff work which might require it?

ADMINISTRATIVE ABILITY

Did he assign responsibilities to his staff?

Did he respond to all correspondence and copy concerned parties?

Did he make specific assignments with specifc due dates?

Did he establish feedback procedures so he would know who had what assignment and when it was due?

DECISION MAKING

Did he get work started rather than defer even when due dates were in the future?

Did he act when further inputs would be too little or too late?

Did he avoid unwarranted assumptions which could have been checked before committing to action?

WRITTEN COMMUNICATIONS

Did he clearly and succinctly express his thoughts and wishes in writing or was he ambiguous and wordy?

MENTAL ALERTNESS

Was he able to conceptualise broadly - that is, the organisation and his position in it and the possible interrelatedness of some of the cases?

Did he note important details such as dates of a letter, the time a response is requested?

SENSITIVITY

Did he act with sensitivity for the different circumstances and relationships of the various people involved: to superiors, peers, and subordinates (look at how he expresses his wishes in writing)?

Use this scale in your rating

1. Very poor
2. Poor
3. Average
4. Good
5. Very good

OBSERVE AND RATE THESE ASSESSMENT FACTORS

In-Basket Item	Planning and Organising	Written Communications	Decision Making	Administrative Ability	Mental Alertness	Sensitivity	Total Rating	Estimated Number of Words
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
Total								

IN-BASKET_____ SUBJECT NO._____ RATED BY_____ DATE_____

APPENDIX E

THE JOB DIAGNOSTIC SURVEY (JDS),

THE SEMANTIC DIFFERENTIAL SCALE "MY TASK"

AND THE PERSONAL INFORMATION QUESTIONNAIRE

(These questionnaires were administered at the end of the first session of the study)

J O B D I A G N O S T I C S U R V E Y

This questionnaire was developed as part of a Yale University study of jobs and how people react to them. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to different kinds of jobs.

You are asked to rate the characteristics of the following job:

_____

Please keep in mind that the questions refer to the job listed above, and <u>not</u> to your own job.

On the following pages, you will find several different kinds of questions about the job listed above. Specific instructions are given at the start of each section. Please read them carefully. It should take you no more than 10 minutes to complete the entire questionnaire. Please move through it quickly.

SECTION ONE

This part of the questionnaire asks you to describe the job listed on the front page as objectively as you can. Try to make your description as accurate and as objective as you possibly can.

A sample question is given below.

A. To what extent does the job require a person to work with mechanical equipment?

1--------2--------3--------4--------5--------(6)--------7

Very little; the job requires almost no contact with mechanical equipment of any kind.	Moderately	Very much; the job requires almost constant work with mechanical equipment

You are to circle the number which is the most accurate description of the job listed on the front page.

If, for example, the job requires a person to work with mechanical equipment a good deal of the time---but also requires some paperwork---you might circle the number six, as was done in the example above.

1. To what extent does the job require a person to work closely with other people (either "client," or people in related jobs in the organization?)

1-------2-------3-------4-------5-------6-------7

Very little; dealing with other people is not at all necessary in doing the job.

Moderately; some dealing with others is necessary.

Very much; dealing with other people is an absolutely essential and crucial part of doing the job.

2. How much autonomy is there in the job? That is, to what extent does the job permit a person to decide on his or her own how to go about doing the work?

1-------2-------3-------4-------5-------6-------7

Very little; the job gives a person almost no personal "say" about how and when the work is done.

Moderate autonomy; many things are standardized and not under the control of the person, but he or she can make some decisions about the work.

Very much; the job gives the person almost complete responsibility for deciding how and when the work is done.

3. To what extent does the job involve doing a "whole" and identificable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finished by other people or by automatic machines?

1-------2-------3-------4-------5-------6-------7

The job is only a tiny part of the overall piece of work; the results of the person's activities cannot be seen in the final product or service.

The job is a moderate-sized "chunk" of the overall piece of work; the person's own contribution can be seen in the final outcome.

The job involves doing the whole piece of work; from start to finish; the results of the person's activities are easily seen in the final product or service.

4. How much variety is there in the job? That is, to what extent does the job require a person to do many different things at work, using a variety of his or her skills and talents?

1-------2-------3-------4-------5-------6-------7

Very little; the job requires the person to do the same routine things over and over again.

Moderate variety

Very much; the job requires the person to do many different things, using a number of different skills and talents.

5. In general, how significant or important is the job? That is, are the results of the person's work likely to significantly affect the lives or well-being of other people?

1-------2-------3-------4-------5-------6-------7

Not at all significant; the outcomes of the work are not likely to affect anyone in any important way.

Moderately significant

Highly significant the outcomes of the work can affect other people in very important ways.

6. To what extent do managers or co-workers let the person know how well he or she is doing on the job?

1-------2-------3-------4-------5-------6-------7

Very little; people almost never let the person know how well he or she is doing.

Moderately; sometimes people may give the person "feedback"; other times they may not.

Very much; managers or co-workers provide the person with almost constant "feedback" about how well he or she is doing.

7. To what extent does doing the job itself provide the person with information about his or her work performance? That is, does the actual work itself provide clues about how well the person is doing--aside from any "feedback" co-workers or supervisors may provide?

1-------2-------3-------4-------5-------6-------7

Very little; the job itself is set up so a person could work forever without finding out how well he or she is doing.

Moderately; sometimes doing the job provides "feedback" to the person; sometimes it does not.

Very much; the job is set up so that a person gets almost constant "feedback" as he or she works about how well he or she is doing.

SECTION TWO

Listed below are a number of statements which could be used to describe a job.

You are to indicate whether each statement is an accurate or an inaccurate description of the job listed on the front page.

Once again, please try to be as objective as you can in deciding how accurately each statement describes the job--regardless of your own feelings about that job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing the job listed on the front page?

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

_____1. The job requires a person to use a number of complex or sophisticated skills.

_____2. The job requires a lot of co-operative work with other people.

_____3. The job is arranged so that a person does not have the chance to do an entire piece of work from beginning to end.

_____4. Just doing the work required by the job provides many chances for a person to figure out how well he or she is doing.

_____5. The job is quite simple and repetitive.

_____6. The job can be done adequately by a person working alone---without talking or checking with other people.

_____7. The supervisors and co-workers on this job almost never give a person any "feedback" about how well he or she is doing the work.

_____8. This job is one where a lot of other people can be affected by how well the work gets done.

_____9. The job denies a person any chance to use his or her personal initiative or discretion in carrying out the work.

_____10. Supervisors often let the person know how well they think he or she is performing the job.

_____11. The job provides a person with a chance to finish completely any work he or she starts.

_____12. The job itself provides very few clues about whether or not the person is performing well.

_____13. The job gives a person considerable opportunity for independence and freedom in how he or she does the work.

_____14. The job itself is not very significant or important in the broader scheme of things.

MY TASK

		Extremely	Quite	Slightly	Neither One nor the other	Slightly	Quite	Extremely	
1.	Good	___	___	___	___	___	___	___	Bad
2.	Interesting	___	___	___	___	___	___	___	Boring
3.	Complex	___	___	___	___	___	___	___	Simple
4.	Pleasant	___	___	___	___	___	___	___	Unpleasant
5.	Difficult	___	___	___	___	___	___	___	Easy
6.	Structured	___	___	___	___	___	___	___	Unstructured
7.	Attractive	___	___	___	___	___	___	___	Repulsive
8.	Explicit	___	___	___	___	___	___	___	Vague
9.	Clear	___	___	___	___	___	___	___	Hazy
10.	Meaningful	___	___	___	___	___	___	___	Meaningless
11.	Varied	___	___	___	___	___	___	___	Routine
12.	Tangible	___	___	___	___	___	___	___	Intangible
13.	Positive	___	___	___	___	___	___	___	Negative
14.	Broad	___	___	___	___	___	___	___	Narrow
15.	Exciting	___	___	___	___	___	___	___	Dull

GENERAL INFORMATION

Thank you for giving up some of your time to participate in this exercise. In this section I would like you to provide me with some information about yourself. Of course, this will be treated as confidential and will be used for research purposes only. Thank you for your co-operation.

1. What is your name?

2. What is your address?

3. What is your telephone number?

4. What is your age? (Check one)

____under 20 ____40-49

____20-29 ____50-59

____30-39 ____60 or over

5. How long have you been a university student, indicate if part-time or full time? (Check one)

____0-1/2 yr. ____3-5 yrs.

____1/2 - 1 yr. ____5-10 yrs.

____1-2 yrs. ____10 or more yrs.

____Part-time

____Full-time

APPENDIX F

SCALES 1 TO 5 OF THE WORK AND
LIFE ATTITUDES SURVEY AND THE
BEHAVIOURAL MEASURE OF INTRINSIC MOTIVATION

(These questionnaires were administered at the
end of the second session after participants were paid)

WORK AND LIFE ATTITUDES SURVEY

You are asked to rate the characteristics of the following job:

_____

Please keep in mind that the questions refer to the job listed above, unless stated otherwise.

On the following pages, you will find several different kinds of questions about the job listed above. Specific instructions are given at the start of each section. Please read them carefully. It should take you no more than 5-10 minutes to complete each section of the questionnaire. Please move through it quickly.

SECTION ONE

For some people work is just a means to get money, it is something they have to put up with. For others, work is the centre of life, something that really matters to them.

I would first of all like to ask you about your reactions to work in general, and whether actually doing work is important to you personally. By "work" I mean having a paid job.

Here are some statements which people have made about work and working, in general. Without limiting yourself to your present occupation would you write a number in the blank beside each statement, based on the following scale to indicate how strongly you agree or disagree with each comment in turn? Remember I am asking about paid jobs in general, notsimply your present occupation.

1	2	3	4
No,I strongly disagree	No, I disagree quite a lot	No,I disagree just a little	I'm not sure about this

5	6	7
Yes, I agree just a little	Yes, I agree quite a lot	Yes, I strongly agree

_____1.1 Even if I won a great deal of money on the Golden Kiwi lottery I will continue to work somewhere.

_____1.2 Having a job is very important to me.

_____1.3 I should hate to be on the dole.

_____1.4 I would soon get very bored if I had no work to do.

_____1.5 The most important things that happen to me involve work.

_____1.6 If unemployment benefit was really high I would still prefer to work.

SECTION TWO

Now we can move in a little closer to how you personally feel about your present job. Again I would like you to think about a number of statements that people have made about work, but this time think about your present job, not work in general.

Please write a number in the blank beside each statement based on the following scale:

1	2	3	4
No,I strongly disagree	No, I disagree quite a lot	No,I disagree just a little	I'm not sure about this

5	6	7
Yes, I agree just a little	Yes, I agree quite a lot	Yes, I strongly agree

Indicate how strongly you agree or disagree with each comment. Remember that I'm asking now about your present role as a

_____

_____2.1 I feel a sense of personal satisfaction when I do this job well.

_____2.2 My opinion of myself goes down when I do this job badly.

_____2.3 I take pride in doing the job as well as I can.

_____2.4 I feel unhappy when my work is not up to my usual standard.

_____2.5 I like to look back on the day's work with a sense of a job well done.

_____2.6 I try to think of ways of doing my job effectively.

SECTION THREE

The next set of items deals with various aspects of your job. I would like you to tell me how satisfied or dissatisfied you feel with each of these features of your job.

Each item names some aspect of your role as a_____

Just indicate how satisfied or dissatisfied you are with it by using this scale:

1	2	3	4
I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure

5	6	7
I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied

_____3.1 The physical work conditions

_____3.2 The freedom to choose your own method of working.

_____3.3 The recognition you get for good work.

_____3.4 The amount of responsibility you are given.

_____3.5 Your rate of pay.

_____3.6 Your opportunity to use your abilities.

_____3.7 The attention paid to suggestions you make.

_____3.8 The amount of variety in your job.

_____3.9 Now, taking everything into consideration, how do you feel about the exercise as a whole?

SECTION FOUR

You may have felt in the last section that some of the job features mentioned were not present in your job very much. It is likely that some of the aspects did apply to your job, while others applied less or not at all. Could we now go through a small number of these items again together with a few new ones?

Thinking about how much you feel each feature is present in the job you are doing, please write a number in the blank beside each statement based on the following scale:

1	2	3	4	5
There's *none* of that in my job	There's *just a little* of that in my job	There's a *moderate amount* of that in my job	There's *quite a lot* of that in my job	There's a *great deal* of that in my job

_____4.1 The freedom to choose your own method of working.

_____4.2 The amount of responsibility you have.

_____4.3 The recognition you get for good work.

_____4.4 Being able to judge your work performance, right away, when actually doing the job.

_____4.5 Your opportunity to use your abilities.

_____4.6 The amount of variety in your job.

_____4.7 The attention paid to suggestions you make.

_____4.8 The feeling of doing something which is not trivial, but really worthwhile.

_____4.9 Doing a whole and complete piece of work.

SECTION FIVE

Now let us look at the things that matter to you in a job. What things are important in a job and what things are less important in your opinion? I would like you to think about paid work in general - any paid job you might do or might like to do, not just your present role.

Listed below are a number of characteristics which you might look for in a job. Please write a number in the blank beside each statement indicating how important each one is when you think about jobs you would like to do, based on the following scale:

1	2	3	4	5	6	7
Not at all important	Not particu-larly important	I'm not sure about its importance	Moderately important	Fairly important	Very Important	Extremely Important

_____5.1 Using your skills to the maximum.

_____5.2 Achieving something that you personally value.

_____5.3 The opportunity to make your own decisions.

_____5.4 The opportunity to learn new things.

_____5.5 Challenging work.

_____5.6 Extending your range of abilities.

SECTION SIX

Thank you very much for attending today's session and for your co-operation. I may want to ask for your assistance in the near future to repeat the same exercise which you did yesterday. However, I shall not be able to compensate you for your efforts. In order to find out how many of you are willing to return for another session, please answer the question below.

Would you like to participate in this exercise if it were repeated again? (Check one) Give reasons for your answer.

___Yes ____No